

## 3Com's open source push

New router modules to support applications from VMware and others. **PAGE 5.**

## Is search a waste of time?

Companies are smartening up search tools to make employees more productive. **PAGE 14.**

## Five things Nortel must do

Enterprise networking and wireless are key components of the company's comeback plan. **PAGE 15.**

# NETWORKWORLD

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January 29, 2007 ■ Volume 24, Number 4

## guide to NETWORK ACCESS CONTROL

**Proceed with caution**  
IT execs such as Scott Erickson of Erickson Retirement Communities are finding out that deploying NAC today is not easy. In this report, Senior Editor Tim Greene analyzes the various approaches that you can take to achieve effective network access control.

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**FACE-OFF:** Should your NAC device be in-line rather than out-of-band? Jeff Prince of ConSentry Networks (yes) and Grant Hartline of Mirage Networks (no) mix it up.

Go online to hear Prince and Hartline debate their positions.

Also, go online for a compilation of our NAC coverage.

And check our NAC Buyer's Guide  
[WWW.NWDOCFINDER.COM/1072](http://WWW.NWDOCFINDER.COM/1072)

NICHOLAS MCINTOSH

## Earlier daylight-saving start costing IT departments time

BY JENNIFER MEARS

At first blush it may seem like no big deal: Clocks will move ahead by an hour three weeks earlier than usual this year. But for today's networked businesses, the simple change could mean complex problems if IT shops aren't prepared, industry experts say.

The trouble goes beyond missed meetings and messed-up schedules to errors within time-reliant applications that are critical to a company's business — processes such as operating room scheduling, billing and contract deadlines, and ensuring record compliance could be at risk. Any applications dependent on timestamps will run into trouble after March 11, the new day for the change in daylight-saving time, if actions aren't taken.

For more than two decades, daylight-saving time has begun on the first Sunday of April and reverted to standard time on the last Sunday in October. But

beginning this year, because of the Energy Policy Act of 2005, the daylight-saving schedule will be extended by a month, beginning on the second Sunday in March and ending on the first Sunday in November. Legislators backing the change say it will save some 100,000 barrels of oil a day.

The change also could throw a wrench in IT systems set up to handle the old daylight-saving schedule. As a result, IT professionals need to take a close look at their systems and applications to determine which could be thrown off when the change occurs and then take the necessary steps to correct them (see graphic, page 14).

"My fear is that a lot of people aren't going to realize this is a big issue until months down the road when they say, 'Oops, why aren't these dates lining up,'" says Scott Metzger, CTO at consumer credit

**See Daylight saving, page 14**

## Credit card industry still needs to plug security gaps

BY ELLEN MESSMER

Major credit card companies have made it mandatory for merchants and payment processors to comply with stringent network security rules that went into effect in mid-2005. But getting buy-in from the millions of companies that handle credit card information remains elusive.

American Express, Visa International, MasterCard Worldwide and Discover Financial Services are among the backers of the rules known as the Payment Card Industry Data Security Standard (PCI DSS).

**See Security, page 11**

## These VoIP players know the score

BY TIM GREENE  
AND PHIL HOCHMUTH

It's a given that with time VoIP will replace traditional voice technology in corporate networks. Sales of IP phone systems have surpassed those of traditional PBXs, and business VoIP will exceed traditional voice by 2010, according to IDC.

In the meantime, companies will need technology to make the transition smoothly and expand VoIP to wireless phones, handhelds, laptops and other devices. And they will expect to benefit from the new capabilities voice has when it is

sent via IP; for example, it can be embedded in applications.

Here is a list of 10 companies that warrant attention as the business environment shifts its voice technology:

### 10 VoIP COMPANIES TO WATCH

#### ■ Cantata

Founded: 2006

CEO: Marc Zionts, who helped spin off Excel Switching from Lucent,

then merging it with Brooktrout Technology to form Cantata.

**Headquarters:** Needham, Mass.

**Funding:** Undisclosed investments from GreenView Associates, Oak Investment Partners

**See VoIP, page 10**

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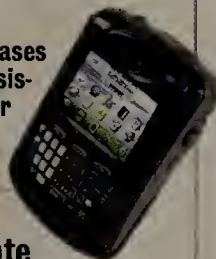
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RYAN SNOOK

# 3Com touts open source

Linux-based modules to support third-party applications in routers

BY PHIL HOCHMUTH

3Com this week plans to make a fresh run at Cisco and Juniper with an enterprise network strategy focused on embedding security, management and VoIP services from itself and others into its routers and switches.

The company will kick off its Open Services Networking (OSN) effort by introducing a module for 3Com routers capable of running applications from an array of new partners, such as VMware, as well as from open source code. 3Com says its strategy rivals Cisco's approach for running advanced services at the network layer but allows IT executives more flexibility in choosing such services.

Observers say 3Com is taking a novel approach, but that its challenge will be to execute and sustain the effort better than its past comeback attempts.

The news marks the company's first significant product launch since 3Com veteran Edgar Masri rejoined the company as its CEO in August. The move comes two months after 3Com bought out its joint venture with Huawei Technologies, the China-based network vendor that co-developed and built 3Com's midsize- and large-enterprise infrastructure products.

3Com's OSN module is a Linux-based server blade that fits into the company's 6000 series routers. It is designed to run applications that benefit from being close to the network layer, the company says. The blade will operate inside the 6000 unit on top of the core IP routing and security layer, which runs on a proprietary operating system and hardware, as before. Administrators would control the OSN blade through a Web-based interface, independent of the control interface for the 6000 device.

3Com is partnering with four software vendors, whose code will be able to run on top of the blades:

- Vericept, which makes data analysis and security software, as well as regulatory compliance tools for the Sarbanes-Oxley Act and the Health Insurance Portability and Accountability Act.

- Q1 Labs, which sells security-event correlation software that uses standards-based NetFlow data to identify threats and other potential problem patterns in network traffic.

- Converged Access, a maker of traffic-management software for controlling and optimizing application flows over WAN links.

- VMware, EMC's server virtualization subsidiary, whose technology will let non-Linux applications run as a service in a virtual-machine environment on an OSN blade.

In addition to these applications, 3Com says it is working on moving its own VCX IP PBX platform, as well as its TippingPoint intrusion-detection and intrusion-prevention products (IDS/IPS), to the OSN module.

3Com is releasing the module to limited service provider and channel partner customers this month, with availability — and pricing — for enterprises expected in the fourth quarter. Also later this year, 3Com says it will have an OSN module equivalent for its Switch 7000 and 8000 series Ethernet switches, similar to services blades for Cisco's Catalyst 6500 — which include content delivery, security, wireless, management and other services.

"It's an interesting approach for 3Com," says Zeus Kerravala, an analyst with the Yankee Group. "Anything that can run as an embedded service on a network can run on [the OSN blade]; Their ability to virtualize services, especially with VMware, allows [a customer] to run almost anything on the router."

Kerravala says 3Com's partnership plan is a more open approach to adding network services to hardware than Cisco's ISR technology scheme.

On ISR products, which also use Linux-based Network Services Modules for services, only Cisco-based network service and application packages, such as CallManager IP PBX or IDS/IPS, can be added. These services are tightly coupled to the hardware in the router.

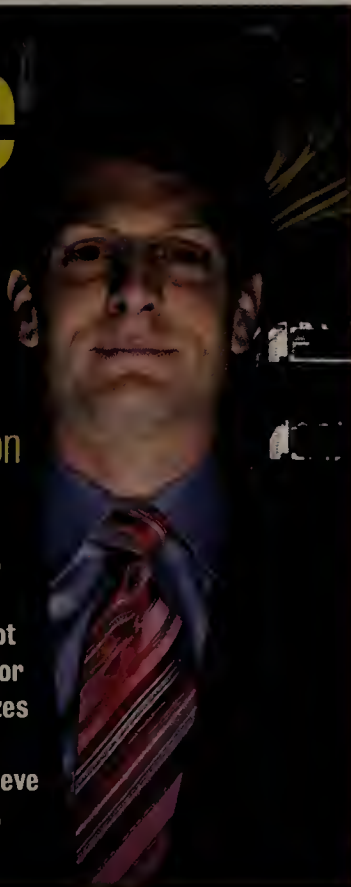
3Com also supports several open source software packages to run on the OSN modules. Supported software includes Multi-Router Traffic Grapher; Nagios, a service-level agreement reporting tool; NTOP, a traffic-analysis tool; and Wireshark, which can capture and analyze packet streams. 3Com says it plans to add more open source packages this year, such as Snort intrusion detection, and other technologies around application optimization, caching and content delivery, and authentication.

These will be available as add-on packages. Customers, 3Com partners and resellers will be able to download, configure and install them on the routers via a secure Web portal. 3Com plans to launch the program, called 3Com Open Network, this week.

While 3Com's OSN strategy may be more open than its competitors', Cisco's tighter control also assures high reliability and protection from misconfiguration or security gaps. ■

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NICHOLAS MCINTOSH

3Com CEO Edgar Masri on:

- Why he returned to 3Com.
- What the Huawei buyout means to users.
- What to expect from the company in '07.



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# Newsbits

## IBM bets on social networking

■ IBM/Lotus is betting heavily that social networking software will be a boon to corporate productivity. At its annual Lotusphere conference, the company unveiled its first integrated bundle of social networking tools slated to ship later this year. Lotus Connections includes blogging, bookmark sharing, user profiles and software to track activities and build online communities. In addition, IBM showcased its next wave of tools with a "social software" pedigree that target business intelligence, real-time communications and development of Web 2.0 applications. Though some observers question the management and training challenges corporations may face in rolling out such tools, Erica Driver, principal analyst at Forrester, thinks IBM is headed in the right direction. "This is how [younger workers] interact, this is how they live. Shortly it will be a disadvantage for companies that don't put social networking in place, because these tools can improve information worker productivity."

## Cisco security problems

■ Cisco last week warned of three vulnerabilities within its IOS software that could allow a denial-of-service attack or let a hacker run arbitrary code on an affected switch or router. One is a TCP packet problem related to a memory leak in certain versions of IOS. There's also an IPv6 router header vulnerability, and a bug concerning how IOS processes IPv4 packets with a specially crafted IP option. The U.S. Computer Emergency Readiness Team warns that all three vulnerabilities could cause a device to reload its operating system. This could cause a secondary, sustained DoS condition because packets won't go through the device. Cisco has published workarounds and issued an updated version of the software.

## NIST competition kicks off

■ The National Institute of Standards and Technology last week announced a public competition to pick a new cryptographic hash algorithm that will become the new federal information processing standard. A cryptographic hash algorithm is a highly complex math formula that can be used to create digital signatures and authenticate data to ensure it hasn't been tampered with. The current NIST federal hash standards include variations of the Secure Hash Algorithm, SHA-1, SHA-2, SHA-256, SHA-384 and SHA-512. Because cryptographic researchers have reported serious attacks against these algorithms, NIST will start what's expected to be at least a three-year process to find a new hash standard by eliciting public comment and submissions. The approach is not unprecedented: NIST carried out this type of evaluation process several years ago to find the replacement for the Digital Encryption Standard, which after a lively global competition, ended with the selection of the now widely used Advanced Encryption Standard.

## Telecom growth healthy

■ The telecommunications market continued to consolidate throughout 2006, but that consolidation proved beneficial for the worldwide telecom industry, which grew 11.2% in 2006 to \$3 trillion. The Telecommunications Industry Associations reported the growth in its annual market review and forecast, released last week. The U.S. market accounted for \$923 billion in revenue, an increase from \$845 billion in 2005. Growth in the United States is in part caused by bundled offerings from incumbent providers and cable competitors. Other drivers include greater numbers of residential users adopting VoIP and a surge in wireless data usage.



{ quote of the week  
quote of the week  
quote of the week }

"The information technology business as it pertains to large businesses has become a lot of maintenance."

*Dave Girouard, general manager of enterprise business, Google*

See story at [www.nwdocfinder.com/7142](http://www.nwdocfinder.com/7142)

## Ashcroft advises software company

■ A company advised by former U.S. Attorney General John Ashcroft is selling software designed to detect internal fraud and help companies comply with Sarbanes-Oxley requirements. D2C Solutions, founded as a consulting firm in 2000, reinvented itself as a software company one year ago. The company's risk and compliance management software for ERP systems tracks user access to financial systems to make sure employees don't gain unauthorized access that could let them commit fraud. As a paid adviser to D2C, Ashcroft "provides us guidance on his understanding of the state of the market, what our products need to be doing to help customers, and helping us figure out the best way to position our product in the eyes of regulatory agencies," says D2C President Waters Davis.

## A new way to look at interference

■ A University of Illinois researcher is trying the wireless equivalent of making a silk purse out of a sow's ear. The National Science Foundation has awarded Daniela Tuninetti a five-year, \$400,000 grant to explore ways of using radio interference to improve wireless communications. Interference is not a random phenomenon; it's a communication between two radios, with a structure, "and it can be exploited," says Tuninetti, who is an assistant professor of electrical and computer engineering at the university's Chicago campus. She envisions a group of client devices cooperatively monitoring the radio environment and sharing power, signal strength, signal processing and other resources to enable and support optimal communications. She foresees handheld

## TheGoodTheBadTheUgly

< **Carriers: Cell phones are safe.** A four-year study of cellular telephone base stations has found their transmissions pose no risk to human health. One not-so-surprising caveat: Mitsubishi Chemical Safety Institute carried out the study for Japan's three largest cellular carriers: NTT DoCoMo, KDDI and Softbank Mobile.

**Google laments complexity.** Speaking in Boston last week at the Mass Technology Leadership Council's annual meeting, Google's Dave Girouard said the "insane complexity" of technology is leading companies to spend 75% to 80% of IT budgets simply maintaining the systems they already have.

**U.S. cities not so smart.** For the second year running, no U.S. city has made the list of the world's top Intelligent Communities of 2007, as selected by global think tank Intelligent Community Forum. The ICF selects its list based on how advanced the communities are in deploying broadband, building a knowledge-based workforce, combining government and private-sector digital inclusion, fostering innovation and marketing economic development.

devices forming peer-to-peer, meshed networks, where individual antennas could form a much larger, virtual multi-antenna system. "Every device will have intelligence for discovery, routing and relaying information for others" in the network, Tuninetti says.


## PCs eclipsing spouses

■ Having trouble remembering you're married? Forget what your significant other looks like? There might be a good reason for that: 65% of PC users spend more time with their home computer than their spouse or significant other, according to a recent study. People's increasing dependence on technology is partly to blame, according to industry research firm Kelton Research, which conducted the survey of 1,000 American adults with a PC and broadband Internet access. In the Cyber Stress study, 84% of respondents say they are more dependent on their PCs "in their everyday lives" than they were three years ago. The study also found that, while PC users admit to making quality time with their desktops a priority over human interaction, it's not always fun. The average survey respondent reported experiencing computer problems eight times over the past three years. Roughly half of those polled said computer problems incited feelings of "anger, sadness or alienation."

## COMPENDIUM

### What will Google kill today?

Paul Browne recently declared that Google Spreadsheets will mean the end of Java. Google provides a host of other things it's supposedly going to kill, including: Microsoft, eBay, book publishers, TV, libraries and all of us. **Read more at** [www.nwdocfinder.com/7141](http://www.nwdocfinder.com/7141).



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■ **Dumb cities?** A list of "intelligent" cities that didn't include any in the United States got readers talking. What about Cambridge, Mass? Or Cleveland? Cleveland ranked above Cambridge, apparently.  
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■ **The naked truth about teleworkers.** Do you work at home in the nude? The owner of a nudist colony in California writes in: "I have known about this phenomenon for years. I would say 80% of our guests bring their laptops here and work at the poolside nude. They all comment that it is the most fun part of having to be plugged into the office. And our guests all say when they are at home working and the kids aren't around, they work nude. It gives them a feeling of freedom for being forced to work on their own time."  
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■ **RDBMS vs. LDAP.** A reader wonders: "Which one is better when I need reporting on the stored data?"  
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■ **The 10 network-iest movies of all time.** We posted our list; readers can't believe what we left off: Where's "The Lawnmower Man"? HAL from "2001: A Space Odyssey"? And, of course, "Tron." Not to mention "Minority Report," the Tom Cruise movie in which everyone walks by a store and some hologram knows their name, RFID at its finest."  
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**Would you trust this company?** Says Paul McNamara in Buzzblog: "So what would you say if I asked you to input your Social Security and credit card numbers into this handy-dandy search box on my Web site and then I'll go scan the Internet to make sure that your personal info hasn't already fallen into the hands of identity thieves? You say you'd sooner set your hair on fire and let me put it out with an ice pick?" That's the idea behind a new service called StolenID Search. [www.nwdocfinder.com/7148](http://www.nwdocfinder.com/7148)

**Linux getting easier.** James Gaskin relays the news that Linspire will be allowing access to its CNR (Click-n-Run) application warehouse for free and will work with major Linux providers to make CNR a one-click installation resource for many Linux operating systems. Writes Gaskin, "Windows wins the easy application installation race against Linux almost every time, but that may change with this new, and welcomed, coordination and collaboration among Linux ven-

dors." [www.nwdocfinder.com/7149](http://www.nwdocfinder.com/7149)

**The portable sound studio.** If you're on the road but still need to record that all-important podcast, how do you block out ambient noise that could make the podcast sound amateurish? Multimedia Exchange's Jason Meserve and Brian Wood, the sound guy, found an article for building a portable sound studio. Brian's going to build one, and Jason will publish the results of their tests in his blog. [www.nwdocfinder.com/7150](http://www.nwdocfinder.com/7150)

**Building a better fingerprint.** The Alpha Doggs blog reports on research into biometric authentication devices, and the research is actually pretty basic. They're asking questions like, what's the best height for a work surface used for a fingerprint sensor? The answer is twofold: 36 inches yields the fastest results, and 26 inches yields the best image quality. [www.nwdocfinder.com/7151](http://www.nwdocfinder.com/7151)

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**Stay away from mon-key roses.**  
Jason

Meserve and Keith talk about the latest Cisco IOS vulnerabilities, the European Storm Worm outbreak, and why your spouse should be more important than your PC.  
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Mike Karp looks at the latest version of IBM's Tivoli Storage Manager.  
**Help Desk response:**  
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Robin Gareiss looks at implications for the branch office of Microsoft/Nortel's VoIP plan.  
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M.E. Kabay ponders some age-old challenges of identity management.  
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Plus: A world with no wires; HP claims chip breakthrough

**Convergence & VoIP:**

Analysts Steve Taylor and Larry Hettick report on Unity, AT&T's program of unlimited free calling between its wireless and wireline phone subscribers.  
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**Wireless in the enterprise:**

Imagine when all the network cables in your organization have disappeared. Could it ever happen? Editor Joanie Wexler reports.  
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**Network access control:**

Senior Editor Tim Greene looks at Fortinet's plans to release an enterprise access switch that enforces NAC policies plus other security functions.  
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**Servers:** Senior Editor Deni Connor details HP's chip-architecture technology, which the company claims dramatically increases performance and reduces power consumption.  
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**Identity management:** RSA develops a new authentication factor that involves somebody you know. Writer Dave Kearns explains how it works.  
[www.nwdocfinder.com/7132](http://www.nwdocfinder.com/7132)

**Linux:** Senior Editor Phil Hochmuth reports about a tool that is available for Linux administrators interested in Security Enhanced Linux, but they are hesitant to deploy the technology because of its complexity.  
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## VoIP

continued from page 1

and TowerBrook Capital Partners.

**What it offers:** Technology for core and peripheral support of IP communications, including media servers, speech recognition software, enhanced IP services software, and combination IP and TDM voice signaling.

**Why company is worth watching:** It can provide products that will become more sought-after, as large corporations and service providers adopt VoIP and need to revise their infrastructure.

**How it got its start:** The merger of Brooktrout Technology and Excel Switching.

**Who uses the product:** Alcoa, Bank of America, Comcast, Verizon.

### ■ DiVitas Networks

**Founded:** 2005

**CEO:** Vivek Khuller, formerly with Clearstone Venture Partners, Sycamore Networks and Verizon.

**Headquarters:** Mountain View, Calif.

**Funding:** \$23 million from Clearstone Venture Partners and private investors.

**What it offers:** Mobility Communication Platform, an appliance that combines VoIP security, wireless LAN (WLAN) switching and cellular connectivity for Vo-Fi-to-cellular roaming. The product is not yet available.

**Why company is worth watching:** Fixed-mobile convergence is being identified as the next big technology challenge for enterprises and carriers. DiVitas says its product someday could let businesses give employees a single device for all communications.

**How it got its start:** Khuller was a venture capitalist who came up with the idea to create the company, then shifted over to running it.

**Who uses the product:** So far, WLAN vendors Trapeze, Symbol and AirMagnet have announced partnerships with DiVitas, but the company keeps information about its enterprise beta customers close to the vest.

### ■ Vonex

**Founded:** 2004

**President:** Jerry Fleming, former executive vice president of Interactive Intelligence, the parent company of Vonex.

**Headquarters:** Indianapolis

**Funding:** Privately backed by Interactive Intelligence.

**What it offers:** An all-software IP PBX customized for Microsoft networks.

**Why company is worth watching:** The company says its Enterprise Interaction Center breaks apart the traditional, centralized call-center model and makes customer service operations less expensive to run and easier to manage. EIC uses Session Initiation Protocol (SIP)-based software clients, which

provide a telephony interface and access to other Microsoft-based applications.

**How it got its start:** Spun off from Interactive Intelligence, which makes large-enterprise contact center software.

**Who uses the product:** Broyles Kight & Ricafort (law firm), Dupaco Community Credit Union.

## 10 VoIP COMPANIES TO WATCH

### ■ Fidelity

**Founded:** 2003

**CEO:** Chris Lyman previously founded Virtualis, a Web hosting company, which he sold to Allegiance Telecom, where he

was a manager.

**Headquarters:** Los Angeles

**Funding:** \$5 million from Azure Capital Partners.

**What it offers:** PBXtra, a prepackaged, Asterisk-based IP PBX; and Trixbox, a small-office VoIP system with optional open source packages, such as SugarCRM, Apache Web server and other software, integrated with telephony.

**Why company is worth watching:** AMI Partners research says the small and mid-size business (SMB) VoIP market will reach \$4.5 billion by 2008, and Fidelity is targeting this market.

**How it got its start:** Before Fidelity, CEO Lyman was looking for a phone system for his previous business as a residential VoIP provider and decided to build his own.

**Who uses the product:** U.S. Network Management, an IT consulting firm, other telecom channel partners.

### ■ Four Loop Technologies

**Founded:** 2003

**CEO:** CEO Joshua Stephens was an engineer with Vivendi, where he developed multimedia access technology; he previously had worked at Qualcomm, where he helped develop the Eudora e-mail system.

**Headquarters:** San Diego

**Funding:** Private, amount not disclosed.

**What it offers:** SwitchVox, an IP PBX and messaging application platform based on the Asterisk open source telephony server.

**Why company is worth watching:** While large VoIP deployments make headlines, a majority of business telephones installed are in SMBs. SwitchVox says it has an inexpensive, reliable, simple-to-use VoIP package.

**How it got its start:** SwitchVox's inventors, two multimedia technologists from the merged Vivendi Universal/MP3.com, wanted to create a simple, open source-based VoIP server.

**Who uses the product:** SMB-focused IT/telephony channel partners.

### ■ NewStep Technology

**Founded:** 2003

**CEO:** Neil Baimel, former CEO of Syndesis, maker of service-fulfillment software for service providers.

**Headquarters:** Toronto

**Funding:** \$11.7 million from Vengrowth Private Equity Partners.

**What it offers:** Hardware and software that broker signaling among disparate communications networks to facilitate, for instance, linking traditional PBX calls to Wi-Fi handsets within businesses.

**Why company is worth watching:** As businesses convert to IP, this will enable expanding connections to IP phones, softphones and various handheld devices, as well as traditional phones, without forklifting current hardware.

**How it got its start:** It spun off from Bell Canada.

**Who uses the product:** Embarq.

### ■ Sipera

**Founded:** 2003

**CEO:** Seshu Madhavapeddy, who joined in 2005, was co-founder of Spatial Wireless (acquired by Alcatel for \$300 million in 2004), and is entrepreneur-in-residence at venture capital outfit Austin Ventures.

**Headquarters:** Richardson, Texas

**Funding:** \$19.5 million from Austin Ventures, Star Ventures and others.

**What it offers:** Sipera Internet Protocol Communications Security (IPCS) boxes provide firewall and threat-protection services specific to VoIP networks and protocols, such as H.323, SIP, Cisco's SCCP and other technologies.

**Why company is worth watching:** Some analysts say VoIP technology is ripe for the picking by hackers and malware crafters. As enterprises convert PBXs to server-based VoIP systems, and consumers cut their copper plain old telephone service lines for VoIP, protecting traffic will become increasingly important.

**How it got its start:** Founder and CTO Krishna Kurapati sold IPCell Technologies to Cisco for \$213 million in 2000, then pulled together a team of engineers to begin work on enterprise VoIP security out of a one-bedroom apartment in Dallas.

**Who uses the product:** Goldsmith-Agio-Helms, a Minneapolis-based private investment bank, and Avaya. Nortel has announced interoperability with IPCS.

### ■ FirstHand Technologies

**Founded:** 2002

**CEO:** David Hattey, former 3Com vice president in charge of enterprise VoIP gear.

**Headquarters:** Ottawa

**Funding:** \$16.5 million through three rounds from BDC Venture Capital, Covington Capital, Skypoint Capital, Venturelab Partners.

**What it offers:** Software that extends PBX functions to handheld devices.

**Why company is worth watching:** Its products will help companies integrate VoIP with their Wi-Fi networks and commercial wireless services to broaden the reach of corporate PBXs.

**How it got its start:** Alain Mouttham licensed critical technology from Columbia

University to kick off the company.

**Who uses the product:** OneConnect, Nortel.

### ■ SyncVoice

**Founded:** 2001

**CEO:** Stephen Rizzone, former CEO of IP3 Networks, a maker of network-access appliances that was bought by Second Rule LLC.

**Headquarters:** Costa Mesa, Calif.

**Funding:** \$4 million Series A funding from Clearstone Venture Partners and Hummer Winblad Venture Partners.

**What it offers:** VXTracker management software for unifying management, security and performance of hybrid voice networks.

**Why company is worth watching:** As businesses make the transition to VoIP, they will be faced with multivendor environments in which an overriding management platform can serve as a time- and cost-saving tool.

**How it got its start:** Through working on voice networks, company founder Kerry Shih found there were no tools to manage voice to IT standards, so he created one.

**Who uses the product:** Grant Thornton.

### ■ Pingtel

**Founded:** 1999

**CEO:** William Rich, formerly a venture capitalist with St. Paul Venture Capital; before that, he had been CEO of VocalData, a maker of feature servers for service providers.

**Headquarters:** Woburn, Mass.

**Funding:** \$15 million from Vesbridge Partners and SAIC Venture Capital since 2004, when the company reformed to focus on IP PBXs.

**What it offers:** A SIP PBX called SIPxchange that is based on open source software.

**Why company is worth watching:** The company's open source IP PBX offers businesses low-cost entry to VoIP and the ability to customize features in-house.

**How it got its start:** The company recast itself in 2004 as the creator of an open source IP PBX company.

**Who uses the product:** Amazon.com, Earthlink, Houghton College. ■

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## Security

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"All the merchants are required to comply with the PCI data-security standards or face fines," says Rob Tourt, vice president of network services at Discover. Yet adoption of PCI DSS is not widespread, Tourt admits, though he wouldn't disclose exact figures.

To improve compliance, Discover is getting more aggressive and working individually with certain merchants to make sure they get through the 12-point security plan, which covers firewalls, vulnerability assessment and encryption, among other requirements.

Discover isn't alone in striving to turn PCI DSS into more than a paper tiger. Visa, which works more directly with acquiring banks than with merchants, also is trying to shore up low merchant adoption numbers.

Visa's new approach calls for levying punitive fines on banks that fail to get their merchant customers to comply with the PCI standard — while promising multimillion-dollar incentive packages for banks that prod their largest customers into complying.

The broader goal is to stem the hemorrhage of sensitive customer card data lost in recent security incidents, including the data breach acknowledged earlier this month by TJX Companies, which operates retail chains including T.J. Maxx and Marshalls.

The \$16 billion Framingham, Mass., retailer won't divulge whether it complies with PCI DSS, despite the fact that Gary Crittenden, the executive vice president and CFO at American Express, sits on the TJX board.

American Express is one of the five payment-card companies that last September founded the PCI Security Standards Council, which

issues the PCI security standard. The other four founding members are Discover, JCB, MasterCard and Visa.

### PCI DSS too tough?

The latest version of the standard, PCI DSS Version 1.1, includes about 200 detailed network and physical security requirements the council's founders say they want to see become the norm for pro-



**"We want to work together to drive things forward. This is the first time the five competing brands have come together."**

*Seana Pitt, chair of the PCI Security Standards Council and a vice president at American Express*

tecting payment-card information.

"We want to work together to drive things forward," says Seana Pitt, chair of the PCI Security Standards Council and a vice president at American Express. "This is the first time the five competing brands have come together."

The standard also includes provisions for "compensating controls" that let organizations propose alternative solutions if they can't reasonably meet a particular requirement, such as using encryption to render cardholder data unreadable.

"For older retailers with main-frame systems from the '70s, this may be difficult to do," Pitt says. "If you have a business or technical challenge, the compensating control is a way to demonstrate how to secure that data through alternative methods."

In spite of such allowances, PCI DSS adoption lags among merchants that tend to ignore the requirements until they face punishment for noncompliance, some industry sources say.

Visa, which wouldn't disclose how many of the 24 million Visa card-accepting merchants worldwide are compliant, says it is focused on working with acquiring banks to get Level 1 and Level 2 merchants — which account for nearly two-thirds of Visa's U.S. transaction volume — to comply.

Current PCI compliance among the 230 Level 1 merchants, which process more than 6 million card transactions per year, is 36%, Visa says. Among Level 2 merchants,

which process between 1 million and 6 million card transactions, compliance is 15%.

As part of its carrot-and-stick approach, Visa is investing \$20 million in an incentive fund payable to the financial institutions of the largest U.S. merchants that have already or will validate PCI compliance by the end of August. Conversely, banks risk fines of \$5,000 to \$25,000 per month for failing to

get Level 1 merchants on track by August and Level 2 merchants on track by year-end.

Other fines also could apply, such as \$10,000 per month, per merchant, for storing prohibited types of card information. Visa says it levied \$4.6 million in fines last year, up from \$3.5 million the year before.

### A priority for some

Some businesses that process card payments say they take the PCI DSS mandate seriously.

Boddie-Noell Enterprises, which operates 385 restaurants and stores, is focused on attaining PCI DSS compliance as a Level 1 merchant. The challenge is that Level 1 certification requires some changes in its data center. "This really impacts how you design your network," says Adam Ippock, senior director of IS at the Rocky Mountain, N.C., company.

For example, to satisfy one part of PCI certification, Boddie-Noell determined it would need to add VPN equipment, and probably more staff, to link point-of-sale (POS) devices in its restaurants and stores, says Bob Larimer, the company's director of network computing.

Instead of tackling the issue in-house, Boddie-Noell is turning to an outsourcing partner. Contingent Network Services of Cincinnati is providing the VPN and firewall support to cover PCI requirements to encrypt card data traveling from POS terminals over the wide-area network.

Putting encryption technologies in place also has been a priority for Communications Data Services (CDS), a division of Hearst that carries out data processing on behalf of magazine publishers.

"We are covered under the PCI requirements for about 20 million credit cards," says Paul McCarthy, a CDS vice president. "All the credit card information in our files is encrypted."

CDS also uses Palisade Systems' data-leak prevention gear to monitor outbound and inbound communications with business partners to make sure card data is sent securely.

An inbound transmission "could come from some marketing company unaware of the rules, so we quarantine it to find out exactly where it came from," McCarthy says. "Each week we might find an Excel spreadsheet with 150 credit-card numbers exposed."

Security-assessment firms accredited by the PCI Security Standards Council to assist in compliance say the standard is tough but necessary.

"It goes very deep into the way a company organizes its security," says Abe Kleinfeld, president and CEO of scanning vendor nCircle. He admits the standard can be burdensome but says a zero-tolerance approach is necessary "because we've got to try and prevent these data breaches, which are happening at about one per week."

The frequency of news about data breaches could soon put the card-processing business community in the hot seat with Congress. The new chairman of the House Financial Services Committee, Barney Frank (D-Mass.), voiced dismay earlier this month over the TJX breach, and his aides suggested he might consider legislation aimed at payment-card protection.

Pitt says the PCI Security Standards Council, while advocating adoption of PCI DSS, isn't ready to push for it to become federal law. "We see this remaining a robust standard," Pitt says. ■

▶ **The security breach at TJX is just one more in a string of breaches. When will the corner office hear what we're saying? asks Editor in Chief John Dix. Page 19**

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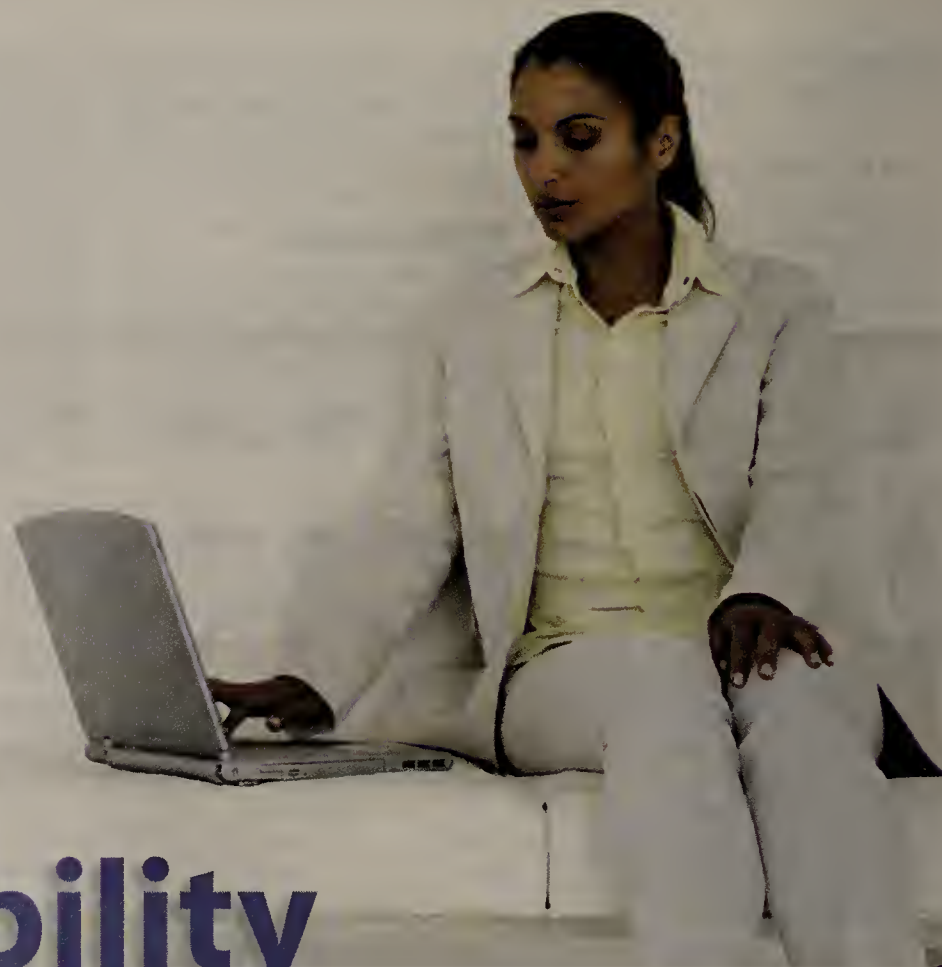
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# Telecommuters gain VoIP options

BY PHIL HOCHMUTH

Telecom and IT administrators charged with supporting telecommuters have as many product and technology options as users have reasons (or excuses) for working from home.

Voice is the lifeblood technology of telecommuters — more so than e-mail, instant messaging or any other means of electronic communications. An array of VoIP and hybrid IP and digital technology options exist for tying home-office workers to a corporate voice system. IT executives should consider, however, to what extent features available in the office should be available to those at home, and at what cost.

## VPN + VoIP

Using a combination of VPNs and VoIP is becoming a standard way for corporate IT administrators to support telephony for work-from-home employees. The common approach requires two well-established technologies: remote-access VPN support, and a VoIP-enabled or pure-IP PBX in the central site. Users set up a VPN-tunnel session between their home-office PC and the corporate network via a standard access technology, such as IPSec tunneling or SSL encryption.

From this point, connecting home users to telephony is pretty much the same as linking an on-premises cubicle or office, because VPN links emulate LAN connections for remote users.

The easiest and fastest way to set up a teleworker phone connection is to deploy an IP softphone on the user's laptop or PC. All major PBX and IP PBX vendors have softphone software that ties into a corporate phone system extension and supports the same feature set as a desktop phone in an office does.

## Softphones rule

At American National Bank of Texas, 25% to 30% of the workforce could be equipped with work-at-home capabilities in the next few years, says Kurt Paige, network administrator for the bank. "Not necessarily for working from home full-time," he says. "Employees would have softphones installed on notebooks, so they have the choice to work either in the office or from home."

The bank uses softphones from Nortel that tie into a CS 1000 IP PBX. A Cisco VPN concentrator provides remote-access VPN links for voice and data.

Softphones are the preferred approach for supporting teleworkers because voice and data are combined on one platform — the notebook or home PC, Paige says.

Teleworkers whose VPN links have decent bandwidth and QoS controls even can have IP, hardware-based phones deployed in a home office. These devices — the same headsets deployed on desktops in the office — register with a central PBX or IP PBX over the VPN link and act as regular extensions on the system.

## Hybrid approach

Most makers of traditional PBXs based on legacy time-division-multiplexing technology have several options for extending connectivity to a home office. Avaya, Nortel, Siemens, NEC and others offer a simple product package that ties a home phone into a corporate PBX (with the help of PC-based software and a VPN link), as well as an elaborate, full telecommuter package complete with a desktop hardphone.

Avaya and Nortel, for example, have a telecommuter option in their IP softphone clients that lets users run call and access features from the softphone application but use a landline telephone for voice traffic.

In such a scenario, calls would be placed via the softphone interface on a PC — connected to the corporate PBX by a VPN link, according to the companies. When an external call is placed, the PBX rings the user's landline phone (usually the home phone number), then calls the external number and bridges the two lines together.

This approach could help teleworkers without a broadband connection, those whose VPNs don't support QoS for VoIP traffic and those who run data-intensive applications over their VPN links. (Signaling and call-setup traffic can run over a dial-up link, but having signaling and VoIP traffic on the same IP link usually requires that it be 1Mbps or faster.) Large file downloads or frequent server transactions could cause interference when packets of a VoIP conversation share the

## VoIP and the teleworker

Two telephony support challenges, and how some IT professionals handle them with VoIP:

### Challenge

Supporting a telecommuter who travels frequently between home and workplace offices.

A work-at-home call center agent needs a clear, reliable voice link that never drops, but running QoS over the teleworker's VPN link is not an option.

### Approach

IP phones could be deployed at the teleworker's workplace, and his home office could be programmed to accept calls at the same extension. Alternatively, a laptop with a softphone client could be used.

A hybrid approach can be used, in which call routing, signaling and features are handled via a VPN-based IP link, but voice is delivered over a public switched telephone network or permanent digital voice circuit to the teleworker's home.

same pipe as data.

Teleworkers also could enter a mobile telephone number as the forwarding line, letting them take incoming calls from co-workers via three-, four- or five-digit extensions, or from external parties. This method also lets employees use their office telephone numbers and extensions while keeping their home phone numbers private. ■

# Virtual appliances on tap from Virtual Iron/rPath

BY JENNIFER MEARS

Virtual Iron Software is teaming with rPath, a company that provides the platform for packaged application appliances, to roll out so-called virtual appliances — preconfigured machines that include an application and operating system.

The idea behind virtual appliances is to free software from hardware constraints. Because virtual appliances contain prebuilt and pretested software stacks that include an application and an operating system inside a virtual machine, organizations can download programs to the appliance and have an application up and running in minutes.

"People talk about how frustrated they are by the amount of time it takes to provision their physical infrastructure, including their applications," says Mike Grandinetti, chief marketing officer at Virtual Iron. "The analogy I draw is that [a virtual appliance] is like downloading a song from iTunes and running it on your iPod. That captures the simplicity."

Because virtual appliances are preconfigured, prebuilt, certified, optimized, ready-to-run software stacks, "you can point and

click and provision [applications] in a matter of seconds vs. what often takes days and in some case weeks," Grandinetti says.

VMware has hundreds of virtual appliances freely available, ranging from security to network management to load balancing. Only about 14, however, are certified virtual appliances, that is, they are ready to deploy in enterprise environments. Virtual Iron, meanwhile, has eight appliances available through its partnership with rPath and expects to be adding more quickly.

VMware and Virtual Iron use different formats to create the virtual servers: VMware uses its own virtual-machine disk format, which it made open and freely available in April last year; Virtual Iron uses the Microsoft Virtual Hard Disk format.

"We're using a free online converter to move from the VMware disk format to the Microsoft Virtual Hard Disk format," Grandinetti says.

Also last week, Virtual Iron announced the launch of its own Virtual Appliance Exchange, where users can download certified Windows- and Linux-based virtual appliances. ■

## Daylight saving

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management firm TrueCredit in San Luis Obispo, Calif.

Mike Sly, a senior IT consultant at IT integrator Evolving Solutions, agrees. Like a lot of vendors and service providers, Evolving Solutions has sent alerts to customers, many of whom haven't been aware of the change.

"It's really more pervasive than [Y2K] ever was," Sly says. "It will impact anything that has to do with dates and times and scheduling — transportation, hotels, airlines, sales. It's just everywhere. . . . It blows me away that not many people seem to be all that aware of it."

Vendors have been focused on the issue and want to help customers make the transition. Most major IT vendors, including Cisco, IBM, Microsoft, Novell, Red Hat and Sun, have Web pages dedicated to the daylight-saving change that outline what fixes are necessary for their products. Smaller vendors, too, are making sure their products are updated.

PeopleCube, for example, late last year began shipping updated releases of its resource scheduling and calendaring software that comply with the new daylight-saving dates. On a larger scale, Microsoft addressed the issue by embedding the updated daylight-saving rules into Vista, and it has patches available for Windows XP Service Pack 2 and Windows 2000. Organizations running Windows XP Service Pack 1 or Windows NT, however, will have to use a workaround that can be found on the Microsoft Web site.

In its daylight-saving directives, Cisco notes that the repercussions of the change extend beyond scheduling and into areas such as security and monitoring.

"This change can have a major

## Preparing for a change

Industry experts say IT executives should make sure they're prepared for the March 11 daylight-saving changes. Some things to consider:

- **Get started:** While the daylight-saving change is still more than a month away, it's time to look at systems now, because it may not be clear what will need fixes.
- **Take stock:** Inventory IT systems to determine exactly what's linked to the network and what is time and date dependent. Some systems, for example, are linked to external network time servers, which should update automatically.
- **Consider the operating system:** While the latest releases, such as Windows Vista, are compliant with the new schedule, older versions will need patches, and some, such as Windows XP Service Pack 1 and Windows NT 4, won't have fixes available. In that case, an upgrade may be necessary, which also could impact applications.
- **Investigate individual applications:** Review applications to determine whether they rely on the operating system, network time servers or internal code for time functions. Java applications, for example, will need application-specific patches.
- **Check in with vendors:** It may not be clear exactly what time functions are in which applications devices. Most major vendors have Web sites set up to help guide customers in dealing with the time shift.
- **Keep communications open:** Let management know how the time shift could impact operations and how things could be handled in case of glitches.

impact on event-correlation activities that are performed as part of normal operations troubleshooting and monitoring," the Web site says. "For security-related devices, where logs are captured, correlated and stored for future reference, this time change could render them incorrect for situations where they need to be recalled to rebuild a sequence of events. The incorrect timestamps might not be an issue for events that get immediate action. However, in the fu-

ture, these events would reference incorrect times."

TrueCredit's Metzger says he and his team have been working since October to make sure their systems move smoothly into the new time. Metzger says the "lion's share" of work they need to do centers around updating Java virtual machines, a task that can be tricky and time consuming because of the variety of Java Runtime Environments.

The good news for Metzger is

that TrueCredit has consolidated its physical environment by running Azul's multicore Compute Appliances, which offload Java workloads to reduce the strain on traditional application servers.

"We just have to do a patch update to four physical machines, which are centrally managed through one console," Metzger says. "Prior [to Azul] we had multiple disparate systems, but consolidating everything onto a fewer number of physical units and having those machines centrally managed has made this particular issue easier to handle."

Rich Debrino, CIO for Everett, Wash., Advances in Technology, which handles IT for a variety of healthcare organizations, including parent company Compass Health, notes that systems tied to external network time servers should have few problems.

"Most proactive IT execs who run a big shop are going to use some kind of network time protocol tied either internally or externally," he says. "If you're using something that's tied externally to a network time server then who cares about daylight-saving time changes because the network time servers are going to be updated anyway."

Internal time servers should also help keep things in line. "Make sure you've got your [time] servers updated, then everybody

else, when they log on to the network, should automatically update," he says.

John Halamka, CIO at CareGroup Health System in Boston, says his staff is patching Windows XP, Outlook and Exchange in accordance with Microsoft's directives and also is reviewing what other fixes need to be made.

"For applications that have time-sensitive stamps [hospital orders, electronic medical record notes] we surely need to fully understand what layer of the system is playing a role in the timestamp and assure it is fixed," he says.

From initial review it seems that most applications derive times from the server operating system, "which use time servers and thus require no patch," Halamka says, adding that the daylight-saving change pales in comparison with Y2K.

"We spent two years and \$20 million on Y2K. This issue has no budget and will take two months," he says.

Nevertheless, industry experts agree that IT managers need to address the issue to avoid glitches.

"The problem is very wide and not very deep," says Steven Ostrowski, a spokesman for Computer Technology Industry Association. "It's going to cause a lot of little headaches instead of big Y2K-type issues. But people need to be prepared." ■

# The cost of ineffective search

BY JON BRODKIN

A company that employs 1,000 information workers can expect more than \$5 million in annual salary costs to go down the drain because of the time wasted looking for information and not finding it, research firm IDC found last year.

Think that's bad? A survey this month of 1,000 middle managers found that more than half of the information they find during searches is useless.

There seems to be no shortage of enterprise search applications to help companies find information hidden within their networks. So why are searches so ineffective?

Most enterprises are not using the most up-to-date search applications, analysts say. They also aren't using the applications they have as effectively as they should.

"They've never invested a whole lot in it," says Matthew Brown, a senior analyst at Forrester

## Time wasted

As much as  
**10%**  
of a company's salary costs  
are wasted on ineffective  
searches, according to the  
Butler Group.

Research. "Companies will spend lots and lots of money on architecting portal systems, intranets, dashboards and databases, and everything else. Search, typically, for internal applications — companies don't spend a lot of time on it."

As much as 10% of a company's salary costs are wasted on ineffective searches, said the Butler Group in a report last October. Richard Edwards, the senior research analyst who co-authored the 240-page report, says a lack of metadata is one of the key problems.

Suppose you create a Microsoft Word document. If the program is set up to index metadata, you will be prompted to fill in fields recording such information as author, title, subject matter or the expiration date of the information contained within the document, Edwards says. These metadata fields are like "outer markings" that make it easier for search

engines to determine whether a document should be returned on a hit list, and reduce their dependency on full text searches.

A decade ago, when enterprise search programs were less widely used, it was "horrendously difficult" to get employees to enter this kind of information, according to Edwards. And it remains hard today, he says, even though the widespread use of enterprise search provides a clear incentive.

"Ninety percent of the documents that are created have no useful metadata," he says. "Until we get more of that metadata it is going to be an uphill struggle to get better results out of these very capable search technologies."

Some high-end enterprise search applications, such as Autonomy, do a "modest job" of determining what a document is about on its own, he says.

"They do more than just pick out the main words and index them. They can look at parts of the document, the document title and headings and work out what the document is

See Search, page 33

## NEWS ALERTS

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# Nortel on the comeback trail

Company honing enterprise focus, with help from Microsoft

BY JIM DUFFY

Nortel has restated its financials and put a new management team in place, but still faces plenty of hurdles in completing a turnaround initiated after an accounting scandal three years ago.

Industry watchers agree Nortel needs to improve customer relations and sort out product lines that are still redundant after acquisitions that took place almost 10 years ago.

Nortel also must focus its lines of business to become a truly formidable No.2 supplier to Cisco in the enterprise. In addition, the company must partner, purchase or develop its way back into the IP core and edge router market, watchers say, and figure out a way to scale to compete with Alcatel-Lucent, Nokia-Siemens and other competitors formed from mergers and acquisitions.

"They're a relatively small company in an industry of giants now," says Zeus Kerravala, an analyst at The Yankee Group. "You really wonder how they can compete long term with some of these larger companies."

Nortel says it continues to build momentum after installing a new management team over the past year and clarifying the markets it intends to pursue with vigor — enterprise, IPTV, WiMAX, IP Multimedia Subsystem, Metro Ethernet and professional services.

"But we're not confused about this being still early in the journey," says Chief Strategy Officer George Riedel.

"Where we do get a shot we do quite well, but the phrase around here is the 'at-bats,'" Riedel says. "Are we missing opportunities because we just don't get a shot? Either customers aren't aware that we have an offering, or we don't have distribution reach or, whatever the combination of things."

Customers agree.

"I don't think that the value of their solutions is in question. The question is: Are they using the right marketing and sales strategies to get their products to market?" says Victor Bohnert, executive director of the International Nortel Networks Users Association (INNUA). "Cisco has two very good things going for them: market visibility and a very aggressive sales strategy. Nortel is going to have to develop those two key pieces."

That will include clarifying its enterprise product road map. Customers say they are getting mixed messages on which product lines Nortel plans to retain.

"Stay focused and deliver it," says Sheng Guo, CTO of the New York State Unified Court System. "If you're changing things too often, you lose credibility."

Riedel says Nortel has made recent strides to keep customers abreast of product directions, and INNUA officials agree.

## Nortel's priorities

The company's self-described keys to completing its comeback.

- Reducing costs or expanding margin by \$1.5 billion over the next several years.
- Transforming the enterprise business.
- Driving next-generation mobility around 4G wireless technologies.
- Building a professional services business.
- Retooling brand awareness and go-to-market strategy.

"We're working on a process now called the product enhancement pipeline where our members can provide enhancement suggestions to Nortel year-round," says Steve Ford, INNUA president. "It is necessary for Nortel to keep the customers up to date on their product road map ... so they can plan their migration, their corporate road map."

Customers also are anxious to see the results of Nortel's alliance with Microsoft around unified communications. Last week, the companies unveiled the first fruits of their effort, which include branch-office gear and offerings that address security and multimedia needs.

"How much of that technology that you guys have in your Communication Server 1000 and telephony [systems] are you going to be willing to work with on Microsoft and see port back and forth?" asks Bruce Meyer, director of network services at ProMedica Healthcare in Toledo, Ohio, a 16-year customer of Nortel. "Are you going to see more Nortel technology in a more software-based kind of solution? We don't know. Nobody knows."

"Everyone believes, in the deal with Microsoft, they've basically gotten out of the voice business," says Frank Dzubeck, president of consultancy Communications Network Architects.

Riedel scoffs at that. "It couldn't be further from the truth," he says. "We think we're redefining the voice business, certainly not exiting it."

Product line clarity should enable Nortel to better compete with Cisco in the enterprise, observers say.

"In the enterprise business, I still have not seen a No.2 emerge," Dzubeck says. "If Nortel assumes that it's No.2 because it has a large portfolio, it isn't showing it in the marketplace. So they have to [become] a No.2 or they should get out of the enterprise space."

Riedel offers that Nortel is a strong No.2 with plans to become stronger.

"We've got a breadth of portfolio —

data, voice and applications," he says. "And relative to other players in the industry — [not including] Cisco — one of the larger sales forces in the world. We invested a lot more in terms of R&D in the portfolio in the enterprise last year to bring a new set of products out. ... But part of what we have to demonstrate is, we're back in the enterprise, we're back engaged, we've got a competitive portfolio, we've got a set of sales and marketing resources ... we need to execute that."

Much of that execution will depend on resellers. CXtec is a long-time Nortel reseller — going back to the days of LAN hub and switch maker SynOptics, which merged with router vendor Wellfleet to form Bay Networks, acquired by Nortel eight years ago.

Through it all, CXtec has dealt with some interesting back-and-forth with its manufacturer — most of it negative.

"The partner program has been in disarray through the years, especially looking at it from the data side," says Frank Kobuszewski, vice president of CXtec's Technology Solutions Group. "There's absolutely room for improvement."

CXtec is seeing some improvement under the current Nortel regime of CEO Mike Zafirovski. He has laid out a clearer vision on channel and strategy, freed up some marketing funds, and made its executives and information more accessible to channel partners, CXtec says.

But Kobuszewski echoes concerns about lack of product clarity and focus, and Nortel has just instituted an unpopular service and support fee structure that charges

partners technical support fees of tens of thousands of dollars, in addition to hundreds of dollars per incident, with a minimum pre-purchase of scores of incidents.

"It does send the wrong message to the channel of, 'As we've also decreased other levels of support, you're also going to have to pay to access technical'" assistance, says Lisa Belodoff, director of strategic marketing for CXtec.

Riedel says Nortel's been offering freebies for too long and has to make up some ground. Nortel says it offered technical service for voice for free, and that the fee structure aligns voice technical services with Nortel data and with the rest of the industry. Nortel says the fee structure is part of a bigger program that will net the reseller more money overall.

As Nortel's comeback evolves, Riedel doesn't find it incumbent upon the vendor to reengage in the carrier core router market as the barriers to entry are too high given the dominant positions of Cisco and Juniper. He is also comfortable with Nortel's current Metro Ethernet offerings at the edge.

Nor does Riedel see that the vendor has to merge with another large player to match the scale of its combined rivals.

"There's a big scale challenge, particularly on the carrier side of the business," he says. "The question is, though, do you believe you can drive an agenda with some disruptive technologies — very targeted, very focused — can we build successful positions there? We think we can."

"You have to pick your battles," he concludes. ■

## Software-as-a-service satisfaction drops, but interest expands

BY JON BRODKIN

User satisfaction with software-as-a-service is starting to slip, but customer interest in this method of outsourcing IT functions is continuing to grow, according to survey results released this month by the Cutter Consortium, an IT research and analysis firm.

"Our latest survey shows that [software-as-a-service] will become a dominant force in 2007," writes report author Jeffrey Kaplan, who runs consulting firm ThinkStrategies and is a Cutter Consortium senior consultant.

Kaplan performed a survey of 88 IT professionals, with 31% already using software-as-a-service, the same as in the previous year's survey, but 43% are now considering it — an increase from 34% the prior year.

He found satisfaction rates of 90% among

users last year, and 80% this year. "I was a little surprised we saw the level of slippage we've seen," Kaplan says.

The diminished satisfaction represents a "warning sign for both users and vendors," he says. Users need to make sure they don't have unrealistic expectations, and must evaluate the capability of vendors before selecting a service, he says.

But it is natural to have some drop in satisfaction, Kaplan adds.

"Whenever a market grows, customers arrive with different sets of expectations. Sometimes, those expectations may not be realistic," he says. "The other part is a larger number of providers emerge and their ability to deliver a consistent quality solution will also vary." ■

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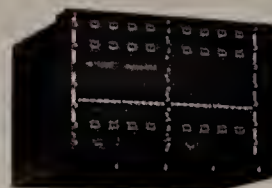
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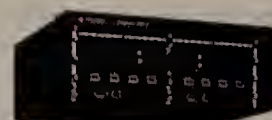
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# TECHNOLOGY UPDATE

■ AN INSIDE LOOK AT TECHNOLOGIES AND STANDARDS

## Bringing cell coverage inside

BY STEFAN SCHEINERT

As enterprise users rely increasingly on cell phones for voice and e-mail connections, ensuring in-building cellular coverage has become more critical.

Large office buildings and corporate campuses can use distributed antenna systems to propagate cellular signals from an on-site cellular base station or repeater, but the cost is prohibitive for small to midsize properties. Pico and femto cell products are now enabling in-building cellular deployment in smaller sites, and an integrated pico cell/distributed antenna system deployment is optimum in midsize facilities.

Pico and femto cells are small versions of the cellular base stations that provide outdoor coverage for cellular subscribers. The cell devices look like Wi-Fi access points and connect to an IP-based service such as DSL for backhaul to the cellular network.

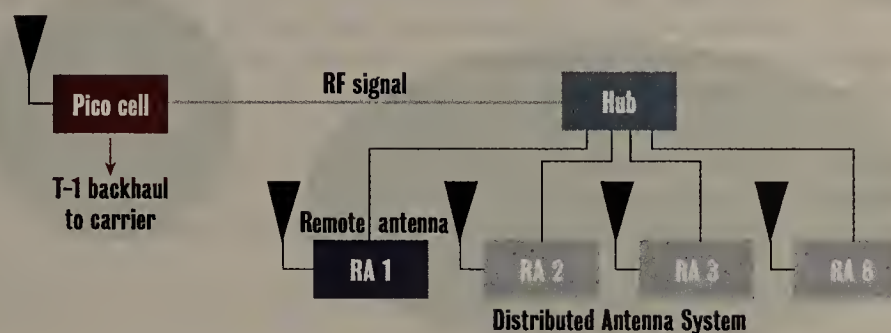
Because pico/femto cell devices can be portable they may interfere with the regular cell network. To compensate, vendors often recommend operating pico or femto cells with very low output power, usually in the 1mW-to-10mW range.

Femto cells have very low output power and limited capacity, and are designed for very small office spaces or residential units. Pico cells are higher capacity, higher power, and can typically cover buildings of up to 30,000 square feet.

To deliver adequate coverage and signal strength in larger buildings, it may be necessary to deploy multiple pico/femto cells. However, this must be planned carefully because each cell may use the same frequency, and the deployment may not meet Carrier to Interference-plus-Noise Ratio

### HOW IT WORKS: Marrying pico cells with DAS

Using multiple pico cells to extend cellular coverage within a building can lead to cell overlap that limits data rates and lead to multiple radio hand offs that strain resources. Alternatively, users can deploy one pico cell and extend its signal with a distributed antenna system, covering an entire floor with one dominant radio source so there will be no hand offs and high-speed data service will be available throughout.



(CINR) requirements for high-speed data. With multiple pico/femto cells installed, parts of the building may receive multiple signals with similar field strengths, so there will be interference and the CINR value will be too low to allow high data rates.

Another approach is to use a central radio and a distributed antenna system to extend the signal. The traffic is backhauled to the carrier's network via a T-1 line. Distributed antenna systems can cover facilities ranging from 10,000-square feet up to millions of square feet.

Determining how and where to place pico cells or use distributed antennas is a matter of compensating for the three factors that impact the reach, quality and capacity of cellular coverage: signal strength (which

impacts cell radius and caller capacity); link budget (equal to transmit power minus minimum field strength); and CINR.

To deliver consistent voice coverage inside a building and prevent devices hunting from one radio source to another, any indoor coverage must deliver a signal that is 8 to 10 decibels stronger than signals coming into the building. In addition, the signal must be pervasive to eliminate dead spots.

Signal strength affects the coverage area as well as its caller capacity. When multiple pico cells are used to cover a space, user devices see multiple radio sources. The devices will hunt between radio sources and, because each pico cell uses a different radio, CINR is very poor, less than 5 decibels.

In areas with low CINR — typically where

pico cell coverage areas overlap — high-speed data services (greater than 3.6Mbps) are not possible. Also, handoffs between radio sources will reduce available network resources and device battery-life.

To compensate, users can deploy one pico cell and then extend its signal with distributed antennas. In this scenario, the entire floor would be covered with one radio, meaning one dominant radio source so there would be no handoffs and CINR will be very high. High-speed data service would be available throughout the floor.

If the building is small enough and regular cell signals are not too strong, a single pico cell base station may be sufficient. In larger facilities, it makes more sense to deploy one pico cell and integrate it with distributed antennas than it does to deploy multiple pico cells.

Because 3G technologies such as EV-DO and High-Speed Downlink Packet Access can carry a lot of traffic, integration of a pico cell and distributed antenna system enables the pico cell to carry a higher load by expanding coverage.

The distributed antenna system also separates the location of the pico base station and the antennas distributed throughout the building. When existing cable can be used, the installation of a distributed antenna system can be easy, straightforward and economical.

Finally, the lower-cost, DSL-based backhaul for a pico/femto cell base station makes the deployment faster and less costly from that perspective.

*Scheinert is CTO at LGC Wireless. He can be reached at [sscheinert@LGCWireless.com](mailto:sscheinert@LGCWireless.com).*

## Ask Dr. Internet

By Steve Blass

**We have an XML schema defining documents that contain paragraphs of text collected from Web-based survey response forms, and we want to store them in a MySQL database. MySQL provides three data types for text storage elements: CHAR, VARCHAR and TEXT. Which is easiest and fastest to work with?**

The differences in processing efficiency between MySQL's three character storage types should not have

a big impact on processing times unless your data sets are extremely large. CHAR items, which are fixed length, are the fastest to store and retrieve but can waste storage space. VARCHAR, a variable-length string, can be slower to store and retrieve but does not waste storage space. TEXT is a character BLOB that requires more storage space and I/O than the other two. Using all CHAR fields for text data technically is the fastest choice, but CHAR data items have a maximum length of 255 characters. The latest versions of MySQL allow VAR-

CHAR items to be up to 65,535 characters long, which is the maximum length of a row. TEXT is appealing because, unlike with VARCHAR, you can put multiple full-size TEXT items in one row. To enable full-text indexing for the data, you will need to use the MyISAM table type for your database regardless of which variable types you choose for your data fields.

*Blass is an IT manager in Phoenix and can be reached at [dr.internet@jschnee.com](mailto:dr.internet@jschnee.com).*



## GEARHEAD INSIDE THE NETWORK MACHINE

Mark Gibbs

Doesn't time fly when you're having fun? We were about to reference a column we wrote "a few weeks ago" but it turns out we actually wrote it at the end of 2004! That must mean we're having lots of fun.

In that column ([www.nwdocfinder.com/7126](http://www.nwdocfinder.com/7126)) we discussed the wonders of a free utility called Process Explorer, which is not only a replacement for the very limited and rather sad Windows Task Manager, but also provides a lot of useful information

about what is going on under the hood.

The company that published that tool, Sysinternals, is now owned by Microsoft and a much improved version of Process Explorer can be found on the Microsoft Sysinternals Web site ([www.nwdocfinder.com/7127](http://www.nwdocfinder.com/7127)).

We just discovered a similar tool for people struggling with Windows systems: What's Running ([www.whatsrunning.net](http://www.whatsrunning.net)), published by Christer Fahlgren.

What's Running works with Windows 2000, XP and 2003, and is very ambitious in its efforts to extract as much information as possible from a Windows system.

For the most part, What's Running uses a two-column layout. The left column lists six views — Processes, Services, Modules, IP Connections, Drivers and Startup — and provides a set of snapshot functions that save the currently discovered data in an XML format. You also can reload pre-

vious snapshots and compare them with the current snapshot to show only the differences.

The right-hand column shows the data for the selected view, and all views can be configured to show as much or as little detail as needed. All views but Startup have an additional subcolumn to the right that shows the details of the currently selected item. There's also a set of tabs at the top that can be used to select the views and provide an addi-

## What's Running . . . extracts as much information as possible from a Windows system.

tional view not listed in the left-hand column.

The Process view shows all processes. You can sort this or any view by any column. The Process view includes a hierarchical tree of the processes or an alphabetic list along with items such as Process ID and CPU utilization.

Selecting a process in the right column displays its details in the additional subcolumn, and includes the process' name, Dynamic Link Libraries (DLL), used, parent process, processor usage, memory usage, handles used, services running within the process and IP connections in use.

The IP Connections view details remote connections of each running process as well as the process' name, ports used, what connections they are listening for and the connection's status.

The Services view shows what services are loaded, their

status, services, type and so on, while the Modules view shows detailed information on all DLLs and EXEs in use and can directly open the folder where the module's file is located. It also provides the reverse of the process view finding all of the processes that have loaded a specific module.

The Drivers view shows information on all drivers, whether loaded or not loaded but registered. It also shows details about running drivers, such as file version, vendor name, dependencies and load order group.

As we noted, the Startup view doesn't have an extra column. In this view all startup items are listed and you can enable or disable, edit delete, and create new startup items that are controlled by the registry or by the startup folder.

The final view, System Info, is selectable from the tabs but not the left-hand views column, and it doesn't have an extra column. It displays basic system information such as installed memory, processor and registered user.

What's Running provides a wealth of useful system information that, combined with the snapshot feature, makes for an incredibly useful system analysis and documenting tool. In use, What's Running is different from Process Explorer in that it imposes fairly significant processor overhead, making it much less suitable as a replacement for the Windows Task Manager.

What's Running is free for personal use and \$25 for a single copy for business use.

*Well, this column sure went by quickly so we must be having fun. Tell [gearhead@gibbs.com](mailto:gearhead@gibbs.com) if you are having fun too.*



## CoolTools

Quick takes on high-tech toys. Keith Shaw

### OtterBox makes rugged BlackBerry cases

It's probably not the best idea to give BlackBerry fanatics additional places where they can feed their wireless e-mail addiction, but there may be times when using a BlackBerry in a rugged condition is required for a job.

In that case, OtterBox recently announced its 1930 and 1931 cases, designed to protect BlackBerry 8700 and 7200 series devices. The 1930 case is \$130 through the OtterBox Web site. The 1931 case is coming soon.

The cases provide water-resistant access to the keypad, scroll wheel, escape, power, mute buttons and the programmable side button. Made of a polycarbonate shell, the cases also include rubber molding for improved grip and some drop protection. The case covers the LCD screen, protecting it from scratches, while the Donaldson acoustic membrane vents allow sound to come through while the case is sealed. OtterBox says the cases have an 810F rating from the military for drop and shock, and an IP54 rating for heavy rain and dust intrusion.



Keep dust and water away from your BlackBerry.

### USB adapter connects telephone to PC for Skype calls

The latest Trendnet VoIP adapter is the ClearLink VoIP USB Phone Adapter (model TVP-SP5G), a handheld adapter that connects to a PC via USB. Connecting a telephone to the adapter lets you make Skype calls from the telephone through the PC's broadband connection.

The device is powered by the USB connection, and a button lets you switch

between a Skype call and a regular phone call. The adapter is \$47 at online retailers and the Trendnet Web site. The company makes other VoIP adapters and accessories, including Bluetooth speaker phone systems.

### Toshiba to offer Vista notebooks

This week sees the official consumer launch of Windows Vista from Microsoft, which means notebook and desktop vendors will be coming out with versions with the operating system already installed. Toshiba said last week that its Satellite P105 and U205 notebook lines will be available soon with Windows Vista Ultimate or Vista Home Premium.

Both notebooks will include a DVD SuperMulti double layer drive (reads and writes as many as 11 formats), DDR2 memory, and a 5-in-1 media card adapter slot. The P105 (starts at \$1,600, available this week) includes a 17-inch widescreen display, full-size keyboard and built-in Harman/Kardon stereo speakers. The U205 notebook is an ultra-portable model with a 12.1-inch widescreen display, shock-absorbing hard drive protection, a spill-resistant keyboard and biometric fingerprint reader. The U205 starts at \$1,300 and will be available on Feb. 6, Toshiba says.

*Starting Tuesday the Cool Tools crew heads to Palm Desert, Calif., for DEMO 2007. Check out [NetworkWorld.com](http://NetworkWorld.com) for preview stories, blog entries and a bunch of demonstrator videos, showcasing the coolest new products. Shaw can be reached at [kshaw@nww.com](mailto:kshaw@nww.com).*



Trendnet makes Skype calling easier with its USB phone adapter.



**On Technology**  
John Dix

## Breaches: Boards need to wake up

**T**he first reports of fraud using data stolen from retail giant TJX in December started to trickle in last week, and many observers fear a torrent will develop.

Although the \$16 billion company — which operates 2,300 stores, including the T.J. Maxx and Marshalls chains — won't say how many customer records were accessed, it says the hacked systems handled credit card, debit card and check information for transactions in 2003 and from mid-May 2006 through December 2006.

Unfortunately, these types of targeted attacks are becoming the norm. Skilled hackers are increasingly in it for financial gain, no longer entertained by the notoriety associated with the release of a virulent new virus or worm.

But you have to wonder why, in this day and age, this type of breach is still possible. It isn't like companies are unaware of the risk.

Data loss has been front page news for years. According to the Privacy Rights Clearinghouse, more than 100 million customer records have been lost or stolen since February 2005. And the business risk is well understood. Conventional wisdom says it costs a company \$150 for every customer record lost, and in some industries that is probably more like \$1,000 per record. So if millions of records are lost, as some expect is the case with TJX, the math is pretty simple.

So why aren't all customer records encrypted everywhere? There is, apparently, a gap between IT's understanding of the problem and the boardroom's understanding or willingness to address the problem. Either we aren't yelling loudly, frequently or clearly enough about the risk, or boards are simply hoping beyond hope it won't happen on their watch.

Surely TJX would have paid whatever it would have cost to encrypt those records, because the costs associated with the fallout will be so much greater. Consider that the data breach at another retailer, DSW, is said to have cost the company some \$10 million.

It isn't like the tools to safeguard against data loss are rocket science. There are plenty out there. And the good news is they are getting easier to acquire and manage.

Utimaco, for example, sells a suite of encryption products designed to protect data in motion, at rest and in use, says CEO Martin Wulfert. The company's tools cover everything from e-mail encryption to safeguarding data on handheld and mobile devices and even removable media.

Offering product bundles helps simplify administration and key management, Wulfert says.

With each and every reported breach, it should get easier to get the attention of the bean counters. The time is right to go back and make your case again.

— John Dix  
Editor in chief  
jdix@nww.com

# Opinions

### Missing from the list

Regarding "The 50 most powerful people" ([www.nwdocfinder.com/7071](http://www.nwdocfinder.com/7071)): It's curious that no IETF Working Group chair appears on your list. After all, the Internet is developed inside IETF, and VoIP, SIP and IPv6 were made by IETF.

Franck Martin  
Vice chairman, Pacific Islands Chapter of the  
Internet Society  
and Internet Society Trustee  
Suva, Fiji

### Outrage lives

Regarding Mark Gibbs' BackSpin column "2007: The Year of Being Outraged?" ([www.nwdocfinder.com/7072](http://www.nwdocfinder.com/7072)): I too sometimes wonder where the outrage is. Often I think we just get tired of the fight. It seems that every week there is someone new stealing from us, or creating situations that physically or financially harm us. I could write a letter every day to complain about some situation, but I do not have time for that.

I did, however, complain to Sony. I am so ticked off about the rootkit fiasco that I have decided not to purchase any product that I can trace back to Sony, if there is any way that I can buy it from another company. Will my single effort help to change the world? Probably not, but I have to do what I can.

Michael Q. Adams  
Irving, Texas

Yes, I am outraged. I am also outraged that my biggest problems are spam and spyware, and no one seems to be doing much about either of them. Spam and spyware are costing businesses billions (note that you pay for this in higher prices), and that doesn't include the loss in worker productivity.

Also note that realized bandwidth would double if all this traffic were erased. Don't tell me nothing can be done about it. I'm outraged that Congress approved spending millions on a bridge in Alaska that no one wants and doesn't go anywhere, and has not yet established a CIA- or FBI-type agency specifically to go after the spam and spyware attackers. Now tell us what we can do about it.

Jack Miller  
Mentor, Ohio

My outrage has mellowed into cold, calculated risk management. Sony is permanently off my list of vendors for any product, for any purpose, because I cannot trust that they aren't (or won't in the future) pull the same thing again.

The consequences to Sony? Well, they aren't going to wither away or probably even notice my boycott. But I did not buy their cheap DVD player at Sam's the other day. I don't look at their flat screens or laptops. No more Sony CDs or DVDs. No movies they had a hand in producing or distributing. If Sony is the unique supplier of something I want, I may revisit the decision. Otherwise, why should I?

Are other companies doing undesirable things to me? Probably. They join the blacklist when they get caught.

I do not eat store-bought meat. I bought my dogs from folks I know. I don't run Microsoft products except in very constrained environments, when necessary (it is stupid or hopelessly idealistic to not test Web pages in Internet Explorer unless you know your audience doesn't use it). But I cannot manufacture my own video card or batteries.

Brandon Sussman  
Webster, N.H.

E-mail letters to [jdix@nww.com](mailto:jdix@nww.com) or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

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# guide



NETWORK ACCESS CONTROL

► **NAC now**  
School district bets on start-up.

► **Waiting on Microsoft**  
Fulton County picks Microsoft's NAP scheme.

► **More NAC** Go online for links to all of our NAC coverage. [www.nwdcfinder.com/7125](http://www.nwdcfinder.com/7125)

NETWORK WORLD SPECIAL FEATURE

## Proceed with **Caution** • and gaps in vendor offerings

BY TIM GREENE

**N**etwork executives planning to deploy network access control should start with very specific goals, not intricate schemes to quarantine and remediate insecure devices, shut down badly behaving machines and record every connection each device attempts to make on the network.

That's because comprehensive NAC rollouts are costly and complex, and the technology is young enough that even if the goals are simple, the implementation may not be.

For instance, Erickson Retirement Communities in Silver Springs, Md., wanted NAC to block intentionally malicious users from gaining access to the network. "If you can't authenticate successfully, you're going to end up in some dirty [virtual LAN] that gives you Internet access, and that's it," says Scott Erickson, the company's CTO, who oversees the firm's 14 campuses. "I want contractors to be able to get [traffic] in and out, and if auditors are here, for them to use their VPNs. That's really what I was after with NAC."

But even that focused agenda is difficult for Erickson to achieve, for two reasons. One, he has been trying to imple-

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"I WANT CONTRACTORS TO BE ABLE TO GET IN AND OUT, AND IF AUDITORS ARE HERE, FOR THEM TO USE THEIR VPNs. THAT'S REALLY WHAT I WAS AFTER WITH NAC."

**Scott Erickson,**  
CTO, Erickson Retirement Communities



\_INFRASTRUCTURE LOG

\_DAY 18: Everything is frozen. It's our processes. They're inflexible. We can't respond to change.

\_Why did we lock ourselves in like this? Brrrr.

\_DAY 19: A way out. IBM WebSphere middleware for Business Process Management. It lets us streamline business tasks. We can test our processes before we roll them out and monitor performance once they're deployed, and reuse is easy because it's based on a service oriented architecture.

\_Everything's unfrozen now. Wow, it's good to feel my toes again.



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### NAC

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ment the technology while keeping an eye on his budget. And two, all the elements he needs are not ready, although vendors he works with talk about them as if they are.

This dilemma stems from the many definitions of NAC being bandied about. Initially, NAC as defined by Cisco was a response to the Blaster worm that ravaged networks in 2003. The goal was to check that endpoints had proper patches and updated security in operation before they gained network access.

Since then, useful additions such as internal intrusion detection/prevention gear have been tacked on to the definition. Notoriety of the technology has soared, and

based on the expanded definition, NAC has been split into two parts: pre-admission and post-admission.

Erickson was interested in pre-admission controls that tie users and machines to policies. He wanted machines to identify themselves as issued by the company or not, then have users identify themselves and use a combination of the two identity checks to determine what, if any, access they get. "Now, if it's a combination of the two, I'll put you into a full, accessible VLAN," he says.

Erickson figured he had all the elements he needed. His Cisco switches are software upgraded to handle 802.1x port-level policy enforcement, and his Cisco Access Control Server (ACS) RADIUS server is interoperable with Active Directory.

erable with Active Directory.

### Lots of Catch-22s

But it wasn't as simple as he thought. For Cisco switches to enforce the policies using 802.1x port authentication, each machine being screened needs 802.1x supplicant client software, and Cisco didn't have any ready late last year when Erickson was ready to go.

He hoped Microsoft would come up with a supplicant for Windows XP that would work with Cisco switches, but it didn't. So his first thought was to pilot Cisco Network Access Control using Microsoft Vista and its 802.1x supplicant.

**See NAC, page 24**

## When you need NAC now

*School district selects pricey appliance from NAC start-up*

BY TIM GREENE

**T**he Upper Canada District School Board decided it needed network access control to securely expand wireless access across the vast district, broaden the types of devices allowed access to its network and keep students out of sensitive servers.

When it started looking for NAC technology 18 months ago, the options were limited, and CIO Jeremy Hobbs came across a story about Nevis Networks in a trade publication. He contacted the company and reached someone he had dealt with before at another vendor. They worked out an arrangement in which the district would be a test bed for the product.

The district also chose Nevis because it doesn't like to get locked into a single vendor, Hobbs says, which is why it decided against NAC schemes from the two industry heavyweights — Cisco's Network Admission Control and Microsoft's Network Access Protection, he says.

The school district sprawls over an area of Ontario three times the size of the state of Connecticut and includes 35,000 students and 5,000 staff. The schools use NAC to allow personal laptops onto the network as well as to expand wireless access, he says. At the same time, the Nevis gear helps keep unauthorized users out of the data center, where human resources and student data are stored.

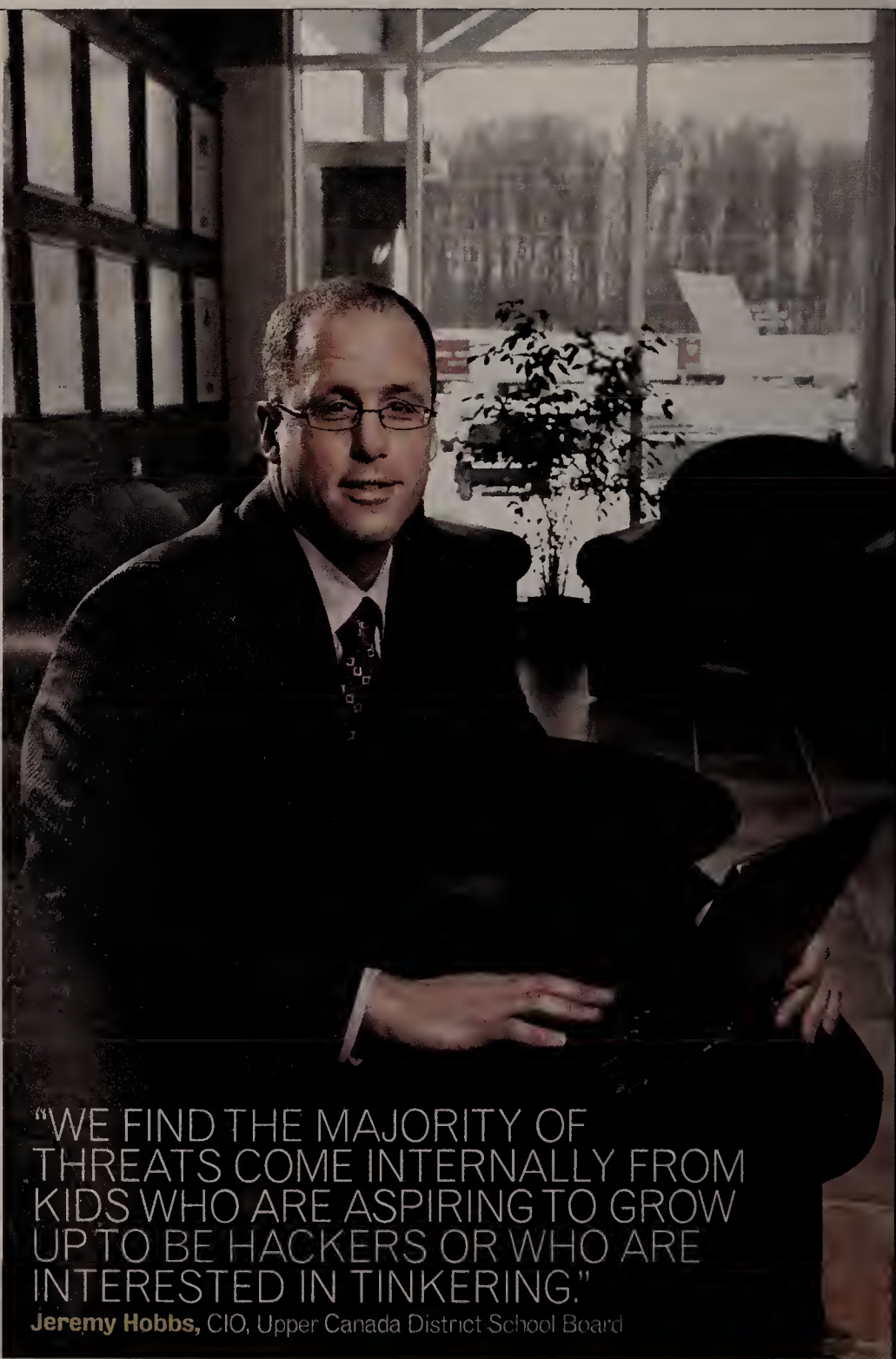
"We find the majority of threats come internally from kids who are aspiring to grow up to be hackers or who are interested in tinkering," Hobb says.

Nevis gear was added to the district network without requiring reconfiguration of the network infrastructure. Hobbs put two Nevis 2026 devices between core switches and access switches serving the data center at the district headquarters in Brockville, Ontario. They integrate with the district's Active Directory so users gain access when they log in from authorized machines. The experience is identical to what users experienced before the NAC equipment was installed, he says.

Users logging in with their own laptops are diverted by the Nevis appliance to a portal, and their devices are scanned for virus definitions, malware and spyware. The Nevis system does not require client software on devices seeking entry to the network.

Users attempting to connect via any of the Wi-Fi access points across the district also must authenticate via user name and password through the Nevis appliance. All of the district's 120 sites have at least one wireless access point, and Hobbs hopes within two years to have 100% wireless coverage in those buildings and to accommodate any wireless device. "We'd like to let the wireless network be wide open but let the network security layer take care of itself," he says.

Hobbs considers the gear pricey. "We probably peak out at 3,500 concurrent users, and you're looking at \$60,000 for 1,000 users. That's a fairly significant investment," he says. He also recognizes that NAC is new and start-ups around today might not be here tomorrow. "If I wasn't experiencing a ton of pressure for these kinds of tools, I'm not sure I wouldn't just wait for a little while longer to let the



"WE FIND THE MAJORITY OF THREATS COME INTERNALLY FROM KIDS WHO ARE ASPIRING TO GROW UP TO BE HACKERS OR WHO ARE INTERESTED IN TINKERING."

**Jeremy Hobbs**, CIO, Upper Canada District School Board

industry evolve a little bit," he says.

In three years, as the technology matures and competition weeds out the weaker vendors, his thinking will likely change. "My guess is at that point we'll probably go with a fully formed product from a bigger player," he says. ■



\_INFRASTRUCTURE LOG

\_DAY 33: Our information is siloed. Unmanageable. People can't access the latest info to make decisions. Gil's resorted to giving everyone access to everything all at once.

\_Monitors now outnumber humans 18 to 1.

\_DAY 36: It's clear to me. We need an IBM Information On Demand middleware solution. Info will be liberated from the silos—available when we need it, whatever the format. Accurate and in context. Now we can make smarter decisions and deliver real business value.

\_Access is a beautiful thing.



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### NAC

continued from page 22

plicant at three sites with about 100 PCs each. "I have three sites with about 100 PCs each that I just opened and I'm going to flip all three of them. Those will be my pilot sites," Erickson says. At least that was the original plan.

Now, he's considering a more costly alternative — installing Cisco Network Access Control appliances at each site. He has so many sites that the cost is high, he says. But he may be forced into eating the extra cost in the interest of avoiding a long wait while bugs are worked out of Vista.

As Erickson's experience points out, NAC can have pitfalls. "There's lots of pieces and parts to NAC and the number of vendors makes it hard," says Zeus Kerravala, an analyst with the Yankee Group.

But Kerravala points out that Erickson has done many things right in his deployment, such as examining whether existing policy-storage directories can fit into the NAC scheme a customer is considering. If a company has Active Directory in use, they should be able to leverage it in a Cisco Network Access Control implementation rather than buying Cisco's Clean Access Server, he says.

Also, businesses should first deploy NAC to a small group of technically savvy users at different sites, just as Erickson plans to do. "Learn your lessons with them and build off that then roll it out more broadly," Kerravala says.

And Kerravala recommends starting with an appliance even if the goal is to embed NAC in the network infrastructure. "A network upgrade is expensive and an appliance lets you test the technology before you commit to one," he says.

#### The no-client, appliance approach

Brett Childress, the director of IT Infrastructure for instrumentation vendor National Instruments in Austin, Texas, says he wanted a NAC appliance from the outset. Two years ago when he started looking, his network vendor, Cisco, had no workable NAC equipment, and he wanted to avoid any NAC scheme that required client software.

He also was interested in post-admission NAC to guard against malware that gets past virus screening. He selected Mirage Networks' gear from among limited choices, primarily because it required no client software. "We just didn't want another piece of software spread around on machines that we would have to keep updated and would make us worry about multiplatform support," Childress says. National Instruments' desktops run multiple flavors of Windows, Linux and Macintosh.

The company doesn't use a formal pre-admission NAC product, instead relying on frequent operating system patches and antivirus signature updates to protect the network from infected machines, Childress says. "With a layered defense of central-managed antivirus, patch management via SMS and with Mirage on top of that, we feel fairly comfortable," he says.

But that could change if the company broadens its remote-access program to include machines owned by employees that are not maintained by National Instruments. Childress says he would have to examine the cost of pre-admission NAC vs. its benefits because it tells the status of the connecting machines' defenses, not whether they have actually been infected.

"I'm checking they have antivirus installed and turned on, a DAT file that's not more than a week out of date, that

they have the most recent critical update from Microsoft," Childress says. "The reality is you're not checking for all these other potentially unknown pieces of malware that could be installed on that machine."

The philosophy of the company is to allow employees unrestricted access to resources and the Internet as long

as that behavior doesn't endanger the network. "We tend to shy away from super-strict, upfront secure policies," he says, and use Mirage to defend against attacks that freedom might enable. "We want to provide an adequate safety net to protect the productivity of the company. We

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## Waiting on Microsoft

*Fulton County selects Microsoft's NAP scheme as the low-cost option, but deployment is on hold*

BY TIM GREENE

**F**ulton County in Georgia is about as far along as any place in implementing Microsoft's version of network access control. But even Fulton County won't be able to put Microsoft's Network Access Protection (NAP) into production for several more months.

The Microsoft endpoint protection architecture delivers what the county wants — the ability to check the status of machines before they gain network access — but the individual pieces aren't ready yet, says Robert Taylor, the county's CIO and director of IT.

Taylor has had Microsoft's Vista client, which enables NAP, on his PC since July 2005 as part of a Microsoft beta program. But the county is waiting for Longhorn Server and an upgrade to Microsoft System Management Server (SMS) that will make it possible to push Vista out to 5,000-plus users.

Without that SMS upgrade, deploying NAP would be too time consuming. "So what we have to end up doing is basically running around from PC to PC and doing it manually. I don't have enough resources to do that," Taylor says.

The county wants to take advantage of its Microsoft enterprise software license to add NAP protections without extra costs by leveraging Vista, which reports on the status of endpoints, and Active Directory in conjunction with Longhorn server, which supply and enforce NAP policies.

The county considered using Cisco's Network Admission Control, but the \$170,000 bid was too expensive. "With Microsoft, NAP is bundled within the product itself and so we don't have to pay the \$170,000 to get it. It's strictly economics," Taylor says.

#### Blasted by Blaster

With NAP making sure county computers have properly patched operating systems and security software updated and switched on, the network will be less vulnerable to attacks such as the Blaster worm that brought Fulton County jails to their knees in 2004, Taylor says.

Blaster ravaged the network during an agonizing four days in which there was no access to state and federal crime databases. "You could not let people in the jail or let people out of the jail," Taylor says. "You've got a little old lady out there saying my son's been in jail and he didn't do anything wrong but they're keeping him in there and won't let him out, and it's all IT's fault."

Other key benefits of NAP include less time spent fixing infected machines, a task that ties up one or two technicians per day re-imaging them. And NAP will save time and money in the maintenance budget, Taylor says.

Contractors for the county who join the network via VPNs will be checked by NAP, making sure their machines also are clean. "We won't have to worry if they're compromising us," he says.

NAP also will support IPSec encryption of sensitive data, which will help the county meet Health Insurance Portability and Accountability Act regulations, Taylor says. Vista and Longhorn server supply the VPN components. "We don't have to go out and buy third-party software to do encryption. That's a big cost, too," he says.

Fulton County plans to start testing NAP next month when SMS is expected to ship. "The whole NAP rollout initiative will start after that, maybe in the second or third quarter of 2007," Taylor says. ■

"YOU COULD NOT LET  
PEOPLE IN THE JAIL OR LET  
PEOPLE OUT OF THE JAIL,"  
TAYLOR SAYS. "YOU'VE GOT  
A LITTLE OLD LADY OUT  
THERE SAYING MY SON'S  
BEEN IN JAIL AND HE DIDN'T  
DO ANYTHING WRONG...  
AND IT'S ALL IT'S FAULT."

Robert Taylor, CIO, Fulton County, Ga.



\_INFRASTRUCTURE LOG

\_DAY 44: This lack of productivity is out of control. What we're using isn't working. Gil's had enough. He moved everyone into one cubicle. A "collaboration" cubicle. We need a better idea.

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\_OK, who sat on my lunch?



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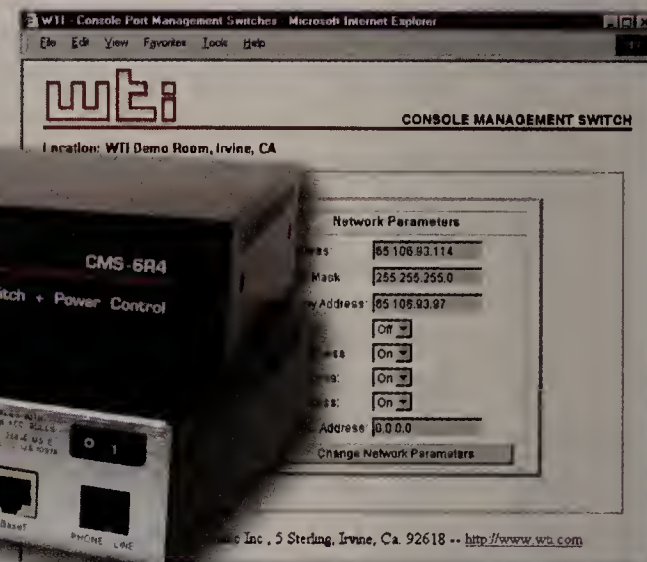
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## NAC

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would never want one user's actions to take down the department for a day."

### The price of pre-admission

Advertising and marketing firm Omnicom Group, based in New York, has adopted ForeScout's Counteract appliance that performs pre-admission NAC. The firm needed this capability because it has so many traveling employees who use their laptops off network for weeks on end, then return with the laptops behind in updates and patches and possibly infected, says CIO Kenneth Corriveau.

Since installing Counteract about a year ago, the company ensures that systems coming on the network are patched and have current virus definitions. Based on their status they are denied access or assigned to specific VLANs, Corriveau says. The pre-admission NAC also checks whether users have filed time sheets and denies access until they are done.

In general, it is important to err on the side of caution, Kerravala says, to avoid unintended disruptions. The classic example: forcing the CEO's laptop to update virus definitions before it can connect to the network. Is the annoyance worth the marginal protection the network gains by the update? "Be careful what you deploy," he says. "What you put in must not prohibit workflow."

That is why it is key to get support for NAC from the top. In particular, managers for lines of business should be part of setting policies that will establish to everyone that the cost and possible delays caused by NAC are deemed worthwhile, Kerravala says.

Corriveau says he enlisted business groups to suggest what post-admission policies were appropriate

ate to their units, but recommended any policies put in place be tested first for unforeseen effects. For instance, his initial policies with the ForeScout gear picked up administrative access to SQL databases as malicious traffic, which it then blocked. Tweaking the policy

corrected the problem, he says.

Despite some shortcomings in the real world, NAC has drawn so much attention that it has solidly worked its way into long-term corporate network planning. According to Harte-Hanks Aberdeen Group, 44% of IT decision

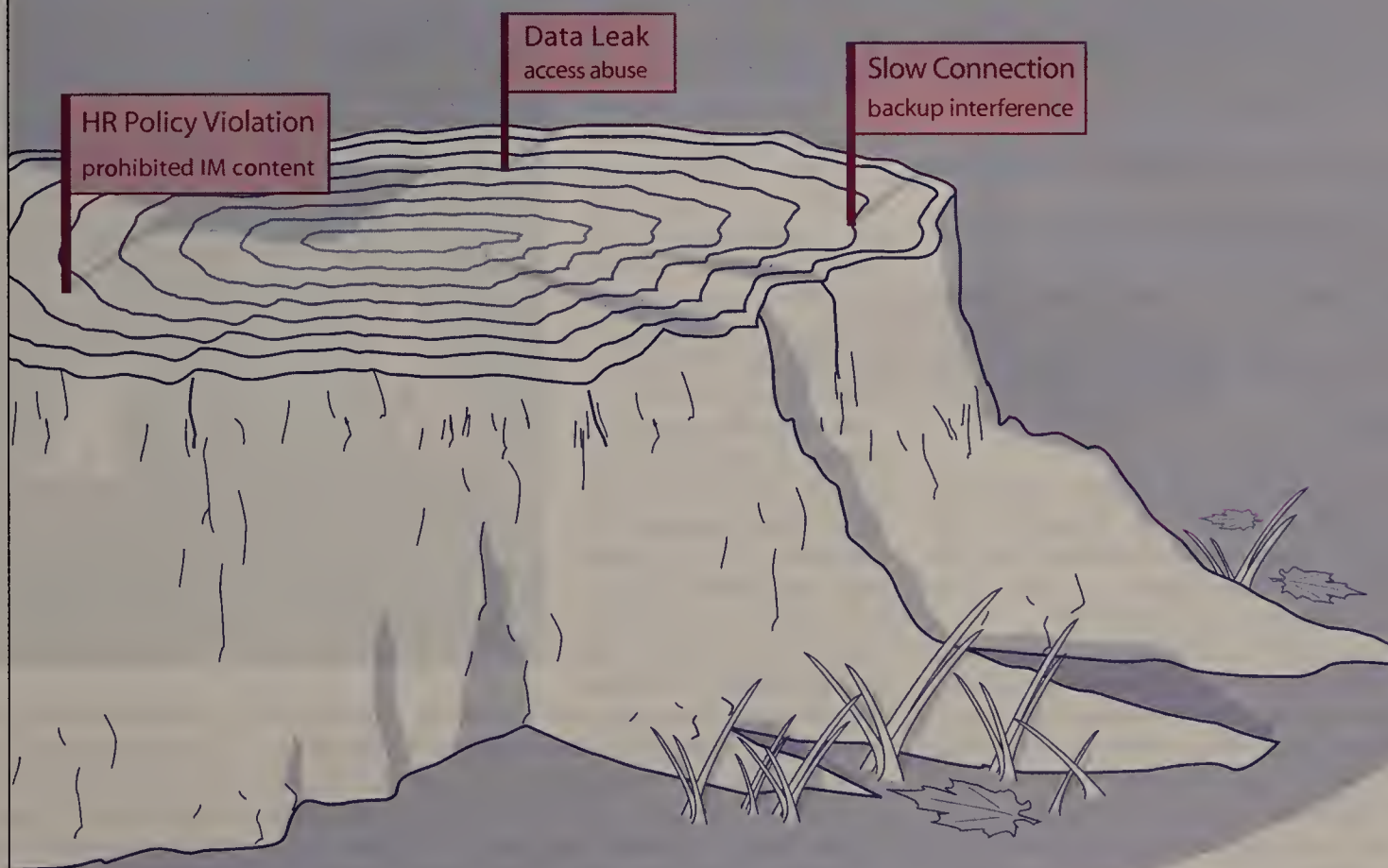
makers polled recently plan to implement some form of NAC this year.

A separate survey by TheInfoPro last fall puts the number likely to implement or develop a NAC plan at 37%, down from 54% earlier last year, but still a significant

number. The decline was perhaps influenced by the late release of Microsoft's Vista client that is essential to many NAC deployments.

These results suggest that limited, controlled NAC deployments are the way to go. ■

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# MANAGEMENT & CAREERS

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## How to survive a corporate integration

Mergers and acquisitions are on the rise, but you can thrive with the new flock

BY ROB GARRETSON

**B**rian Fellows had seen it all before. When media conglomerate Thomson Corp. acquired NewsEdge five years ago, it was the second time his company had been swallowed by a larger competitor. The anxiety that swept through the 20-person IT department was palpable, but Fellows, then the distributor of electronic news and information's network and security manager, kept his head.

"The second acquisition — for me, at least — was a little more known," Fellows recalls. "I'd been through the fires before. I knew it was coming. On the other hand, I was now a manager, and I knew that the higher up you are in the hierarchy, the more likely it is to get peeled off."

Fellows not only survived his company's second acquisition, he prospered. His team grew from two people at NewsEdge to six at Thomson, which folded NewsEdge into its Dialog division. Even as four data centers, including his, in Burlington, Mass., were being eliminated and their functions absorbed by Dialog facilities in Minnesota, his IT group became a primary network-support operation for the 900-employee division.

"My group had grown. My budget had grown. My responsibilities had grown," Fellows says about Thomson Dialog, which he left after a few years to work for a smaller firm. "If I'd stayed there I would have probably ended up with 10 people, managing the networking for one of the [company's] major divisions."

Fellows learned through experience what recruitment and human resources experts agree are the keys to prospering through an acquisition or merger: Have patience; plan for the contingencies; maintain a cooperative attitude and practice problem-solving that can demonstrate your value to the combined company. Mergers and acquisitions typically create high anxiety for employees uncertain about their role in a newly combined company, but keeping cool and taking certain precautionary steps can go a long way toward ensuring a smooth landing, experts and mergers and acquisitions veterans say.

"Be patient," advises Mitchell Marks, a professor at San Francisco State University's College of Business and a con-

sultant specializing in managing corporate transitions. Employees whose companies have acquired or merged with another company typically have more time than they realize to assess the situation and explore their options, he says. Decisions about workforce restructuring and potential job cuts usually are several months away.

"The reality is that companies buy companies, and only after that do they really explore what they've purchased. The deal gets done, and then they do their homework," says Marks, author of *Joining Forces: Making One Plus One Equal Three in Mergers, Acquisitions, and Alliances*. Even when redundancies are identified and targeted for cuts, employees shouldn't panic: "If they're having a 20% [reduction], there are still going to be 80% who stay," he says. "So odds are you're not going to lose your job."

Kevin Rosenberg, managing partner at BridgeGate, an executive recruiter specializing in technology, agrees that integration doesn't happen overnight. "There's time to build relationships inside the acquiring company and show them that they acquired more than just market share or intellectual property; they also acquired a talent pool that's worthy of consideration."

That doesn't mean you shouldn't prepare yourself for possible upheaval. The next step after taking a deep breath is to dust off your résumé and start thinking about your options.

"Prepare a contingency plan," Marks advises. "Make a list of who you would call [about a job]. Update your résumé. You don't have to send it out yet, but just get it ready."

"If you're the acquired party, start getting your résumé ready," Fellows agrees. "Have it ready to go, but don't pull the trigger unless you get something so great that you would have left your [employer] anyhow." If you immediately jump ship, you not only forgo potential opportunities at the newly merged company but also forfeit severance payments and benefits that frequently are offered when companies trim jobs after an acquisition.

"Through every acquisition or downsizing I went through, there were severance packages that came along with it. It's kind of like leaving money on the table," Fellows says.

Volunteer for any transition or integration teams that are formed after a merger or acquisition is consummated. Demonstrating a constructive attitude and valuable problem-solving skills improves your odds of surviving and even prospering in the newly combined company, experts say.

"There were lots of redundancies and lots of axes falling

with each merger," recalls Roy Hayward, an application support manager who has survived the consolidation of at least seven companies in fewer than six years with his current employer, Global Healthcare Exchange.

"Everyone would come to me to solve problems. As a technology person, when the companies merged, that made me very valuable to keep around," Hayward says.

Back-office functions, especially networking and IT in-



frastructure, often play a significant role in integrating merged companies, BridgeGate's Rosenberg says. In addition to the bonuses and other incentives frequently offered to key IT personnel to stay and help with the transition, mergers can provide an opportunity for IT pros to showcase their talent.

"During that period of time, it's a great opportunity for the up-and-coming, highly ambitious, overachiever types to show the acquiring company their personal value," Rosenberg says. "And it's a great way to be noticed, whereas in your former life, you may have been taken for granted."


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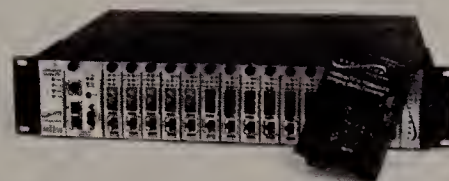
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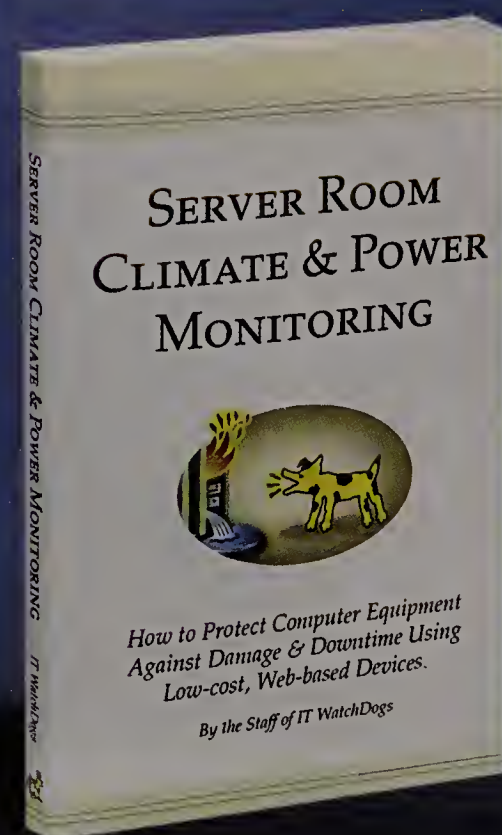
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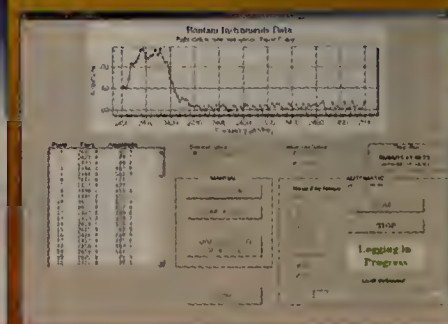
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## Search

continued from page 14

about, and use that in the future to help you retrieve information that is of a similar nature," Edwards says.

Susan Feldman, vice president for content technologies at IDC, has been studying the cost of ineffective enterprise search for five years. Her latest research paper, released in April, found that information workers waste 3.5 hours per week on searches that don't turn up the right information. Assuming an average salary of \$60,000, including benefits — a figure based on 2004 Bureau of Labor Statistics data — the cost of ineffective search is \$5,251 per worker, per year.

"People spend about nine to 10 hours a week, on average, looking for information. Of that time, they don't find the information they're looking for a third to half the time," Feldman says.

Those figures apply only to the use of enterprise search applications, rather than Web searches, such as those on Google, which are less effective, Feldman says.

Sometimes, searches fail because the answer simply isn't there. Or, the right document might exist but it hasn't been spidered — a term Feldman uses for applications that crawl into a repository and create an index of words and documents. If, for example, the server for the CRM department hasn't been spidered, lots of useful information could be excluded from searches, she says.

When setting up an enterprise search application, company managers need to figure out exactly what they need.

"Any of the major enterprise-search vendors have service groups that do exactly this for you," Feldman says. "They'll sit you down and say: 'Why do you want a search engine? Why do you want to find your documents? Are you going to need it for customer service? For e-discovery?'"

New federal rules requiring companies to maintain electronic documents potentially needed in litigation are one factor driving companies to upgrade search engines. The best enterprise search applications widely available today use concept searches, which look for documents and files tied to specific concepts, Feldman says.

A keyword search on Google for "high blood pressure" might not turn up useful

information about hypertension, the technical term for having excessive blood pressure, Feldman notes. An application using concept search, however, would know that high blood pressure relates to hypertension and turn up more useful information.

Searching based on concepts is "the generation of search that is just being adopted

**"People spend about nine to 10 hours a week, on average, looking for information [and don't find it] a third to half the time."**

*Susan Feldman, vice president for content technology at IDC.*

now," Feldman says. Most enterprises have not yet upgraded to platforms that use this technique, she adds.

Modern search applications also detect trends, pulling out such information as stock prices and presenting it in a chart format, Feldman says.

Feldman and other analysts are optimistic that semantic technology will fuel the next generation of searches. The word semantic "means meaning," she says, so an application using semantic technology understands not just keywords but also the relationships between subjects, verbs and modifiers.

"This means you can type in a question and it will understand it," Feldman says. "More and more applications are able to understand who, what, when, where and why questions, and differentiate among them," she says.

The Semantic Web has been a hot topic in technology circles. It has been defined as "an extension of the current Web in which information is given well-defined meaning, better enabling computers and people to work in cooperation."

Building a Semantic Web requires providing a layer of meaning and understanding of content, which is a major challenge because the content on the Internet is owned by so many people, Butler Group's Edwards says.

It's simpler to do that within an enterprise because the content generated by employees would be owned by the corporation, Edwards notes.

A search using semantic technology will turn up the most-desired result about 80% of the time, while searches used by most companies today turn up the right answer less than half the time, according to Benjamin Grosf, assistant professor of IT at the Massachusetts Institute of Technology Sloan School of Management.

"Semantic technologies will advance the state of the art within the next few years by a significant amount," Grosf says. ■

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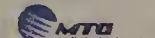
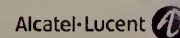
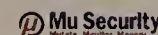
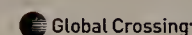
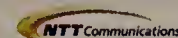


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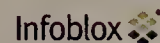
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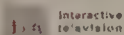
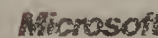
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## Demonizing the 'Net and losing free speech

**R**ecently my colleague Paul McNamara wrote in his Buzzblog about yet another case of the Internet being demonized, and the piece generated quite a bit of feedback.

Buzz wrote about the story of a Houston attorney, Jason Itkin, who is representing four families whose underage daughters were sexually abused after meeting men they encountered on MySpace. Itkin and the complainants are suing not only MySpace but also its parent, News Corp., for not protecting their children.

The insanity of this suit is what got Paul's readers' juices flowing, and the unanimous consensus was the blindingly obvious conclusion: Why weren't the parents watching out for their children?

With a bit of luck the case will get dismissed and the lawyer will get bupkis.

But will this be the end of bogus legal attacks on how we use Internet services? No, because it's guaranteed that other misguided individuals aided by opportunistic lawyers will want somebody else to be responsible for their online negligence, gullibility or downright stupidity.

In terms of the sheer waste of time and money involved, this sorry tale is bad enough, but what's really awful is that the demonizing of the Internet, which has been going on

since it became hot, has recently become increasingly a stalking horse for politicians.

In part, it is obvious why this is so: The Internet is a mirror of our culture but with the unique attributes of anonymity, immediacy and low-cost access enabling a new level of freedom of speech. This makes the 'Net a powerful promoter of egalitarianism — the doctrine that equality ought to prevail throughout society — which, of course, makes most politicians pretty nervous.

That's not to say politicians haven't recognized and embraced the potential of the Internet; for example, consider John Kerry's success raising campaign funds online in '04, the recent rash of presidential hopefuls using the Web to announce their candidacy for the '08 election, and senators and representatives communicating with their constituents by e-mail.

Despite this apparent wave of acceptance it seems the Internet also provides far more freedom of expression for more people than some politicians would like. This is obvious from the way that the "War on Terror" has become the platform from which the conclusion has been derived that free speech is dangerous. In October last year Michael Chertoff, U.S. Homeland Security secretary, speaking at Harvard Law School's Ames Courtroom, argued that the consequences of dismantling the Bill of Rights would "have to be measured with real-world decisions when

deciding on matters that deal with life or death."

A few days later at a meeting of the International Association of the Chiefs of Police, Chertoff said: "We now have a capability of someone to radicalize themselves over the Internet... They can train themselves over the Internet. They never have to necessarily go to the training camp or speak with anybody else, and that diffusion of a combination of hatred and technical skills in things like bomb-making is a dangerous combination."

This is the kind of "thinking" that leads to the recent remarkably close approval (55 to 43) of an amendment to remove a section of a bill that would have required bloggers with audiences of more than 500 to register with and report quarterly to the government or face civil penalties and as many as 10 years in prison.

Had this bill passed as originally structured we would have witnessed a serious blow to our freedom of expression. What worries me is that between the politicians and lawyers there's enough juice to damage not only the 'Net but the Bill of Rights as well. The question is, do we care enough to prevent this from happening? We need to make sure that when politicians and lawyers get the 'Net in their sights, we speak up and express our outrage.

*Whatever outrage you have left, tell me at backspin@gibbs.com.*


**NETBUZZ** News, insights and oddities

**Paul McNamara**

## Wikipedia has to do what it has to do . . .

Wikipedia is always in the middle of some brouhaha or another, and last week was a double-header.

First up, gums were a-flappin' over the encyclopedia's decision to tag all links on its site "nofollow," which will render those links invisible to search engines. Whether this is a good thing, a bad thing or just an unavoidable thing depends on who's talking.

Wikipedia says it's unavoidable because of the mischief caused on its site by spammers and search-engine optimization schemers.

Nick Carr was among the critics: "Wikipedia is adopting the policy to reduce spammers' incentives to add spam links to the encyclopedia. I wonder, though, if it could also have the effect of reinforcing Wikipedia's hegemony over search results. The sources cited in Wikipedia, many of which are original sources, will no longer get credit for their appearance there, which should cause at least a little downward pressure in their own search rankings (hence providing a little more upward pressure, relatively speaking, for Wikipedia's articles). Although the no-follow move is certainly understandable from a spam-fighting perspective, it turns Wikipedia into something of a black hole on the 'Net. It sucks up vast quantities of link energy but never releases any."

Wikipedia's case seems the more compelling here. After all, its primary mission is to provide a reliably usable online encyclopedia, not to ensure an enduring balance of benefits between link givers and link receivers. If someone has a better idea for solving Wikipedia's spam problem, then by all means let's hear it.

That tempest was mild compared with the uproar that followed the revelation that Microsoft has the audacity to care about how it is depicted in Wikipedia.

It was quite a row. And Good Morning Silicon Valley's John Paczkowski did an outstanding job of putting in their place all those who were lambasting Microsoft and standards expert Rick Jelliffe for the former hiring the latter to correct whatever Jelliffe judged to be inaccuracies in Wikipedia entries about Open Document Format and Microsoft Office Open XML. Paczkowski wrote:

"The company seems to have been honest and open about its intentions. It offered to hire an independent expert to suggest corrections in his area of expertise. Jelliffe obviously isn't a Microsoft apologist. And ultimately any changes he might make to the entries at issue will be reviewed by Wikipedia's editors and removed if they're inaccurate. Given Microsoft's position, what else was it supposed to do? Have Waggener Edstrom (Microsoft's PR firm) make the corrections?"

That was exactly my take on the matter after reading Jelliffe's post. The critics are letting their anti-Microsoft sentiments get in the way of giving this situation an intellectually honest weighing. Microsoft didn't do anything wrong, unless you believe every WikiSubject is obligated to sit quietly while what it perceives to be untruths go unchallenged. And Jelliffe most certainly didn't do anything wrong . . . unless you want to count inviting an inevitable round of baseless criticism.

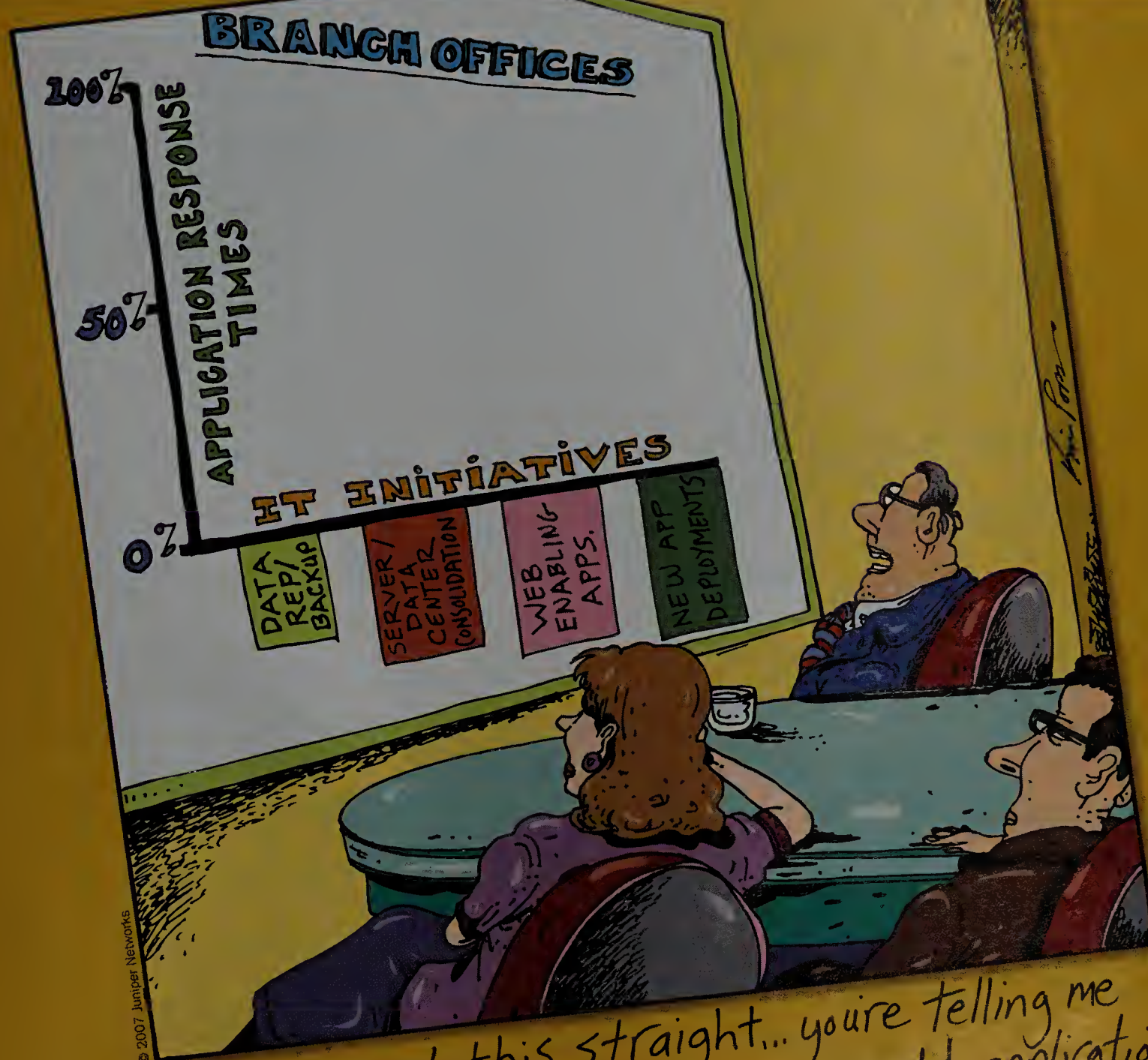
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Your choices: a swath of east-central Montana and the southwest corner of North Dakota; northern Minnesota and Michigan's Upper Peninsula; northern Missouri; and oddly enough, there's a skinny stretch of Texas from just north of its southern tip to right about where you'd expect to find the state's bellybutton that not only avoids hurricanes and earthquakes but has some kind of magical force field that shields it from twisters wandering over from the high-risk tornado zones immediately to its east, west and north. (Note to self: Find out what kind of technology is at work there.)

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